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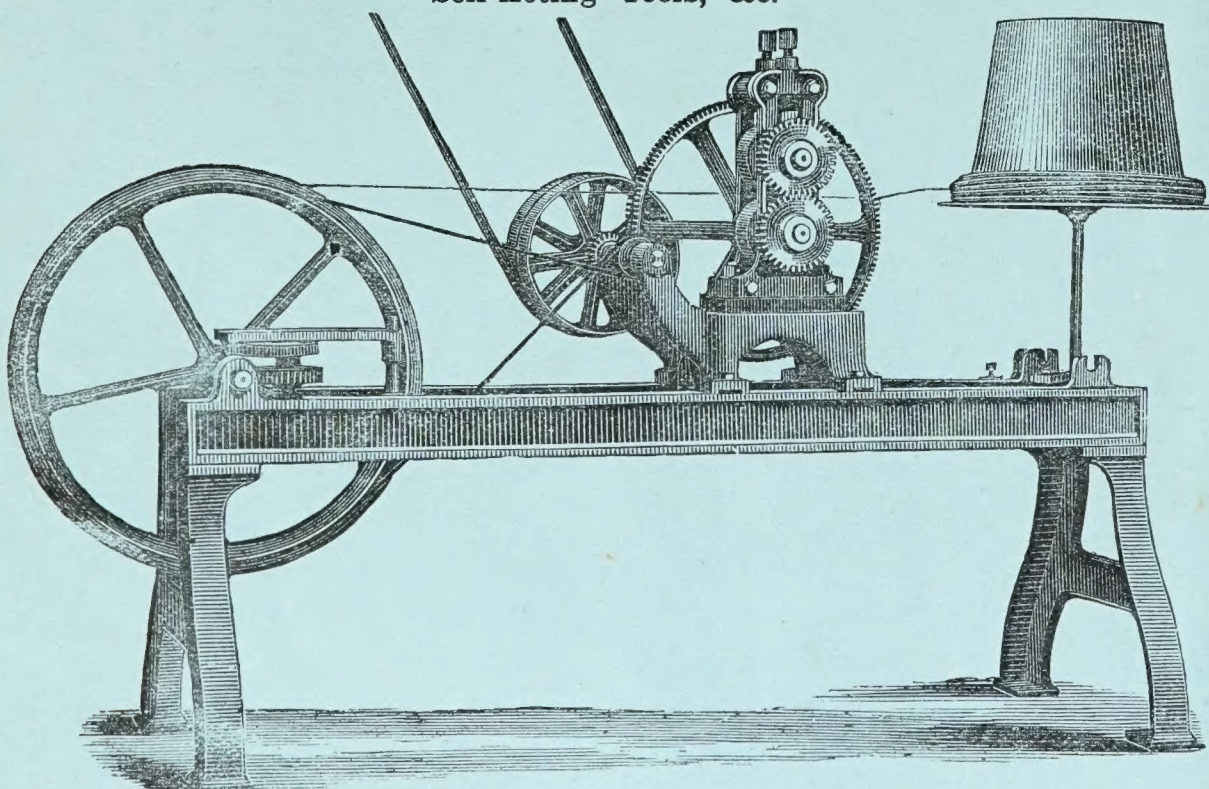
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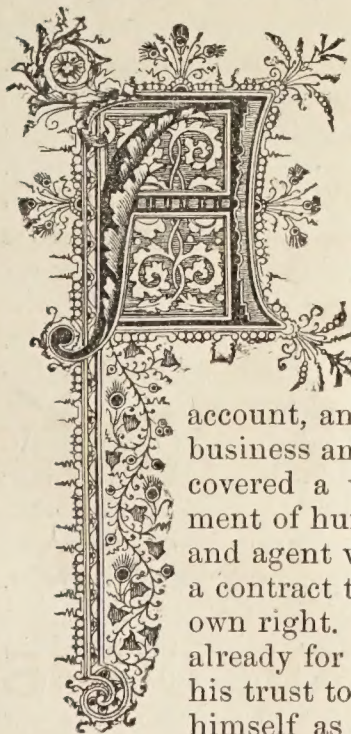
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The Law Between Principal and Agent.



SERIES of lectures on Commercial Law has lately been given in Manchester by Mr. T. F. Byrne. The subject of one of the lectures was the relation between principal and agent. He said that agency was the relation between two parties, by which one confided to the other the management of some business to be transacted in his name or on his account, and by which the other assumed to do the business and to render an account of it. The subject covered a vast area; there was hardly any department of human affairs, in which the law of principal and agent was not of importance. Anyone who had a contract to make could make it if he did so in his own right. That was to say if he was an agent already for some other person he could not delegate his trust to another person, but he must perform it himself as a general rule. There was hardly any restriction as to who might be an agent. Persons who could not contract themselves, under circumstances to bind themselves, might be agent to bind other persons. If a contract was to be made by deed, that was, under seal, it was a principle of law that the agent must have his appointment under an instrument of equal solemnity. There were some contracts under the Statute of Frauds relating to leases, where if an agent made a contract he must have been appointed by an instrument in writing. But with these exceptions no special

form of appointment was required for an agent, or for any work an agent was to do. He might be appointed by word of mouth; his appointment might arise by inference through a course of dealing between the two parties; his appointment might also arise by reason of his relation to another person. With regard to an inferential appointment, if a person had been in the habit of sending a servant to buy goods on credit, and the person paid for those goods, the servant had become the agent of the purchaser. And this agency could not be determined until the person who sent for the goods gave notice to the seller that the agency was terminated. As to agency by the force of the relation subsisting between two persons, a wife became an agent for her husband unless he gave notice that he would not be bound by her contracts. If a husband did not supply his wife with the proper necessities of life, no matter how much he might give notice that he would not be bound by her contracts, she could get the goods she required for her reasonable wants, and to that extent the husband would be bound. Two partners were, by the force of the relation between them, each the agent of the other, and anything one partner did in the ordinary scope and within the course of the trade dealings of the firm would bind the other party. There were a few cases in which the law would imply an appointment as agent from the necessity of circumstances. There was one other way, and it was an indirect way, in which authority might be communicated to an agent, and that was by the process called ratification. There were particular agents and general agents. Particular agents were agents for special acts. If such an agent exceeded his authority his principal would not be bound by what he did. A general agent was an agent whose authority extended to the doing of all acts which usually belonged to his employer, and were incidental to the department of business in which they were engaged. Whilst if a particular agent, went beyond his authority his principal would not be bound, if a general agent exceeded his authority his principal was bound, provided what he did fell within the scope of the business which he was deputed to transact. That was always the question in regard to a general agent; was his act within the scope of his business? Of course the answer to that question was found in the special circumstances of each case; each case would probably be different; and the question was one of fact, to be determined by the jury, not by the judge. The law was very strict in construing the authority of general agents, and would not allow them to exceed what ought to be the full limit of their power. An agent, as a rule, could not delegate his authority. The reason for this was that one who was employed as an agent was so employed on the ground of some special fitness in himself for the performance of the work, and he must not, therefore, depute the work to another, unless he was empowered to do so by the terms of his authority. Of course, in such cases as those of factors, who had goods to sell, or sharebrokers with shares to sell, they might employ the usual sub-agents, in their department of business, to carry out their contracts. Mr. Byrne went on to speak of the revocation of an agent's authority, and of some points in the law of contracts as affecting principal and agent. Speaking of the effect of misrepresentation and fraud in a contract, he said that every misrepresentation committed by an agent in the course of his business had the same effect as if it had been committed by his principal, but a misrepresentation and a fraud which was committed by an agent not in the course of his ordinary business did not affect the principal at all, as the agent was exceeding his authority. The responsibility of an agent in regard to his principal was a very grave one. He stood in a position of trust and confidence with regard to his principal, and the law was so careful of the morals of all persons so placed that it would not suffer them even to incur the risk of temptation. The law exacted from agents the strictest good faith in all their dealings with their principals. An agent, when he was making a contract for his principal or doing any other act, must know no interest whatever in connection with that act except the interest of his principal; and so far as he did know any other interest—even if it was his own—so far would he fail in his duty and be responsible at law. An agent who was employed to sell goods was not himself allowed to be the purchaser, neither could an agent employed to purchase goods be himself the seller, unless in both cases there was a plain understanding between him and his principal to that effect.

Cotton.

(Continued from Page 62, Vol. 2.)

The Cotton manufacture, as we have before stated, had its origin in the East, but it was only in India that the fabric was produced extensively for exportation. The implements used in the various processes, from the cleaning of the raw material to the completion of the web, were of so rough and simple a character, that they might be purchased for a few shillings. The cotton in the state of *Kāpas* (*i.e.*, seeds and wool together) is cleaned and prepared by the women who spin the yarn. Fragments of leaves, stalks and pods are picked out with the fingers, and the wool adhering to the seed is freed from loose and coarse fibres or from any foreign matter by the jaw-bone of the boalee fish, the teeth of which being closely set, small and bent backwards, act as a comb. The next process, that of separating the wool from the seeds, is accomplished by putting some of the combed cotton upon a flat board and rolling an iron pin backwards and forwards over it, either with the hands or with the feet, in such a way as to detach the fibres without crushing the seeds. The next operation, that of bowing the cotton to render it light and downy, is performed by a very elastic bow made of bamboo, with two slips of the same and strung with catgut or any tough fibre. The fleece is then spread out and wrapped round a thick wooden roller and afterwards removed and pressed between two flat boards, then wound round a varnished reed and afterwards, to keep it from being soiled by the hand during the spinning process, it is folded in the skin of the cuchea fish. In spinning the yarn, which is mostly done by women, they make use of the distaff (formed of the leading shoot of some young tree) and the spindle (made from the shrub *Eonymus*, and called from its use—the spindle tree). But notwithstanding the superiority of English machinery, it is only comparatively recently that we have been able to equal, either in fineness or quality, the yarn that is spun by these rude instruments. It is to the delicate sense of touch and the skilful management of the thumb and forefinger that the Hindoos owe their wonderful success in the production of the beautifully fine thread for which India has, for ages, been noted. The loom (according to a reliable authority) of the present day is the one used in olden times by Eastern nations. "It is (he says) composed of a few sticks or reeds which the Indian carries about with him and puts up in the fields under the shade of a tree, or at the side of his cottage. He digs a hole large enough to contain his legs and the lower part of the "Geer" and fastens the balance to some convenient branch overhead. Two loops underneath the geer in which he inserts his great toes, serve as treadles; and he employs the shuttle, formed like a large netting needle, but of a length somewhat exceeding the breadth of the cloth, as "battoon," using it alternately to draw through the weft and strike it up. The reed is the only part of the weaving apparatus which approaches, in the perfection of its construction, to the instrument we use. The loom has no beam and the warp is laid out upon the ground the whole length of the piece of the cloth." The same writer observes that "It is upon these rude machines, worked in the way he has mentioned, that the Indians produce those muslins that have long been such objects of curiosity, from the exquisite beauty and fineness of their texture." Another writer remarks that "The rigid clumsy fingers of a European would scarcely be able to make a piece of canvass with the instruments which are all that an Indian employs in making a piece of cambric." The Hindoo weaver of muslin does not continue these labours during the great heat of the mid-day sun; a temperature of about 82 degrees, combined with moisture, being most favourable to the production of the finest fabrics. In very dry, hot weather it is often necessary to place vessels of water beneath the looms, the evaporation from which supplies the amount of humidity requisite to keep the threads moist and to prevent them breaking. In various Indian districts the weavers apply themselves to the weaving of certain kinds of cloth and so ensure a great degree of skill in their own branches of industry. It is the practice in India for the sons, from generation to generation, to follow the same trade as the father, he has no hope of a change

in business nor of any advancement in life, he therefore directs his energies to gain a thorough acquaintance with the trade that he has inherited and transmits this knowledge to his children. From this cause the country produces many workmen capable of supplying superior goods, but the same cause tends to check advancement in the country, for as there is no hope of rising above the station in which one was born, so there is no stimulus to the inventive faculty, to the cultivation of one's mind or to greater industry. The manufacture of cotton, it is thought, has been carried on in oriental lands for thousands of years as extensively as now, and yet it has given rise to no invention, to no increase of national wealth, nor has it improved the condition of the labouring classes, for they earn barely sufficient to supply their daily needs. Neither have the manufacturers themselves gained sufficient capital to carry on their business, for often the price of the material and the wages of the workman have to be supplied by the buyer of the goods. English manufacturers have feared that the people of India, having the raw material at hand and possessing the advantage of cheap labour and of great skill might gain a knowledge of our machinery, and undersell us to such an extent as to ruin our trade. But in the state of the people of India there are circumstances which render this impossible without an entire change being produced in their moral condition, their habits and their institutions. The extensive introduction of machinery into Great Britain has, by reducing the price of our manufactured goods, enabled us to compete successfully with the Indian goods at home by sending cotton fabrics to India. When the country was first annexed to the English dominions our imports from her were chiefly manufactured goods; they are now mostly the produce of the soil. But, as most of the India manufacturers are also agriculturalists, the change has made little difference to them, for they at once turned their attention to tilling the soil, and the result has proved an improvement in their condition.

(To be Continued).

Application of Alizarine in Calico Printing and Dyeing.

(Continued from Page 63, Vol. 2.)

Alizarine in Red Dyeing.



ALTHOUGH different works produce their one-coloured purples in various manners as far as mordanting, fixation, dyeing and raising are concerned, the processes agree substantially in principle. The differences are chiefly of a mechanical nature, especially at the beginning of the operations, whether a hot flue is available, or if the printing machines have to be used.

In the first process the white pieces are first prepared in diluted alizarine oil in the proportions of 1 to 15, 20, or 25, then dried and aged. The pieces are then washed in clean water, preferably spread out (and, in case of need, with a little soluble silicate of soda, to remove any incidentally occurring oil spot), and are then dried. The pieces are then padded on the hot flue once or twice, according to the weight of the tissue, with red liquor, at from 4° to 7° Tw., made by the double decomposition of equal weights of alum and brown sugar of lead. The pieces are dried, not too strongly, and aged in moist heat, wet bulb thermometer 82° Fahr., and dry bulb 91° Fahr., or else taken through an aging-room at 109° Fahr.

They are then dunged for three minutes in a mixture of cow-dung and chalk at 145° to 167° Fahr., and washed clean. They are then ready for dyeing.

In the other process the pieces, after being prepared in alizarine oil, are mordanted with two padding rollers in the printing machine. The mordant requires a thickening, as for instance:—

Padding Red M.

White starch	320 parts.
Flour	320 "
Calcined starch-water (75 per cent.)...	400 "
Olive oil	160 "
Red liquor, 12 $\frac{3}{4}$ ° Tw.....	2,730 "
Water	5,960 "

Boil and stir till cold, adding before printing,

Fused chloride of Tin (153° Tw. 40 parts.

Solution of Magenta (0.4 per cent.) ... 70 „

After drying and printing the pieces are passed, spread out through a cistern of silicate of soda, chalk and cow-dung, washed, and, to fully remove the thickening from the tissue, they are dunged again for half an hour, and washed again. They are then dyed.

To 130 yards of cloth there are generally used 2 lbs. 3 oz. alizarine, at 20 per cent. The additional ingredients differ according to the tone which is desired, whether a yellow red, a blue-red, or a true-red. The temperature to be maintained during dyeing varies according to the same circumstances from 145° to 212° Fahr. The water plays also an important part, according as it can be used, without addition, or, if it has to be corrected, by the addition of sulphuric acid, lime chalk, or acetate of lime, at 22° Tw.

A proportion which has been found satisfactory in practice is the following:—

8 parts alizarine 20 per cent.

4 parts alizarine oil 80 „

1 part ground sumac.

The dye bath is let rise to 185° Fahr., in an hour, and remains at this temperature for quarter of an hour. After washing, drying and oiling, they are steamed under pressure for an hour, soaped at 185° Fahr. for a quarter to a half hour, using, per piece, from 17 to 26 ozs. curd soap. After drying, the pieces are either finished on the wrong side or they are dressed with a solution of oil, or they are printed with a design in black as furniture goods.

Red grounds with aniline black designs have been lately in great demand, and are produced by printing aniline black upon the pieces after dyeing and soaping. The aniline black is somewhat sharper than that generally used, as the oily tissue does not take the black readily or in all parts. The black should contain chlorate of aniline with sulphuret of copper and vanadate of ammonia (both?). After fixation, the pieces are merely washed or soaped very gently.

If only certain designs are to be dyed red or rose, the colour is printed at once upon ordinary pieces, not prepared with oil.

Red F.

Thickening 4,650 parts.

Salt of Tin 100 „

Acetic acid at 8° Tw 250 „

Red liquor, 20° Tw 5,000 „

Rose M. B.

Thickening 8,200 parts.

Acetic acid, 5½° Tw. 1,200 „

Red Liquor, 20° Tw. 600 „

The above colours are suitable for red and rose, but in combination with aniline black the following red is preferable:—

Red L.

Red Liquor, 11½° Tw. 8,000 parts.

White starch 1,000 „

Calcined starch 1,000 „

Olive oil 600 „

Magenta 10 „

Boil, and when cold make up to 10,000 parts.

Before printing, add

Tin crystals 100 parts,
dissolved in

Acetic acid, 8° Tw 200 „

If red is to be printed over with aniline black, a resisting agent must be added to the colour, *e.g.*, sulphocyanide of barium or of aluminium, aluminate of soda, hyposulphite of soda, &c. The following is a good receipt:—

Resist Red 5.

White starch 700 parts.

Calcined starch 700 „

Tragacanth mucilage (1 in 9) 2,000 „

Acetic acid, 8° Tw 900 „

Sapan wood liquor, 14° Tw. 900 „

Red liquor, 20° Tw. 4,000 „

Boil, and when cooled down to 122° Fahr., add

Hyposulphite of soda 1,400 parts,

and make up to 10,000 parts. The aniline black used must not be too sharp, otherwise it is not easily resisted.

After printing, the pieces are aged in moist heat and dunged twice like plain reds. In the above styles, special attention must be given to the washing, in order to get good whites.

The process of dyeing is essentially the same as we have already described. For large patterns there is required more, and for small ones less, alizarine. The quantity ranges between 10 and 20 ozs. of 20 per cent. alizarine per piece. Besides the alizarine there is added to the bath solution of glue, and sometimes blood albumen or tannin to improve the whites. Particular attention must be paid to the whites, as dyed reds do not bear chlorine, which greatly injures their brightness. Bran baths are therefore used for clearing, and various additions are made before steaming in order to cleanse the whites during that process, such as the addition of a little oxalic acid, tin crystals, &c. The following operations are the same as those already mentioned. After raising and drying, the pieces are finished on the under side in order not to injure the fire of the red. Reds are kept in dyeing more on the yellow side, and roses on the blue. If a blueish rose is required along with a dyed yellowish-red, a steam rose is padded on over the dyed red. For this purpose the following colour is suitable:—

Padded Rose 9.

Alizarine bluish, 20 per cent. 450 parts.

Red liquor, 12½° Tw 450 „

Acetate of lime, 11° Tw 225 „

Thickening 8,625 „

Oxalate of Tin 250 „

After steaming, the pieces are taken through a chalk bath at 185° Fahr.; washed and soaped as required.

(To be Continued).

The Application of Ceruleine in Dyeing Wool.

Mons. A. De Montelaur in giving an account in *Le Jacquard* of the application of Céruléine in dyeing wool, says:—The Céruléine having great solidity, it is interesting to note its application for dyeing cleansed wool, yarns and tissues. The tendency to use exclusively fast colours prevails among producers and consumers of textiles. Mr. Horace Koechlin was the first to furnish receipts, and, notwithstanding the great cost of this substance, many trials were made, particularly for English pantaloons goods. I, myself, for nearly a year have made many trials, and now record the results.

Dyeing fast billiard-green—for 100 pounds of wool: Apply mordant, boiling three hours, with tartar 6 pounds, alum 24 pounds. Leave in vat for 6 or 8 days.

The dyeing is by the following bath:—Mix very carefully in a bucket, Céruléine 10 per cent., 15 pounds; bisulphite of soda, 36 degrees Baumé, 15 pounds; powdered zinc, 1½ pounds. Leave covered for 3 or four hours, with the requisite quantity of water. The dyeing begins at 50 degrees Reaumur, and the heat should be raised to 100 degrees. Boil 2 hours. The alumine mordant having less affinity for the Céruléine, it will be better to repeat the course, than to boil for more than two hours in the first bath. The wool is taken out, drained, spread out and aired for 24 hours, and the air must pass through it freely. As a rule, the bath should always be brown. If it turns green, bisulphite must be added with one-tenth of its weight mingled with pulverised zinc. Olive green, or moss green.—A. Water, 1,000; bichromate of potassium, 5 pounds. B. Water, 1000; bisulphite, 36 degrees, 10 pounds. Boil 1 hour in A; then one hour in B at 80 degrees R.; replace in A for one to two hours, then one to two hours in B. Then dye as above directed.

The chrome mordants produce a more yellow shade, but are more solid than by the alumine mordants. By adding Persian berries (*graines de Perse*), or alizarine to the dyeing bath, moss and brown effects are easily obtained. The Céruléine A P produces grayer but darker shades. Tissues must be rapidly drained after leaving the bath, but at the same time evenly, as by passing them between rollers. The Céruléine will stand soap and carbonization at 4 to 5 degrees Baumé, perfectly. What remains of the baths can be used again.



The Utilisation of Waste.

A paper on "The Utilisation of Waste" was read by Mr. P. L. Simmonds, at a meeting of the Society of Arts, a few days ago. Speaking of the saving effected during the past twenty-five years in the Textile Trades, he said:—"The wool manufacturer, in almost all countries, now uses up cuttings of cloth and shreds of all kinds which were formerly thrown away. These, and the strippings and waste in carding, are now classed immediately after pure wool, and command relatively high prices. There are many who may be disposed to regard the shoddy manufacture as a business to be despised, but the political economist discovers in it a most important source of wealth—wealth resulting from the application of skilled labour to the utilisation of material once worthless, but now contributing no mean sums annually to the wealth of nations. The shoddy manufacture would seem to have originated at Batley and Dewsbury about fifty years ago. It was only in 1861 that we commenced to import woollen rags, about 7,000 tons being received. In 1881, the imports were 35,000 tons, valued at £701,000. There are two distinct terms used in the rag-wool industry, (1) "shoddy," which is the product of soft woollen rags, such as stockings, flannels, shawls, &c., torn by machinery into fibre, suitable, when mixed in certain proportions with wool or cotton, or both together, to be re-spun into cloth; (2) "mungo," which is a variety of the same material, firmer, but much shorter in staple, obtained from hard woollens, such as broadcloths, tailors' clippings, &c. The average price of shoddy is 4d. per lb., and that of mungo, about 6d. Noils and waste are obtained principally from Bradford, where spinning and power-loom waste are produced in considerable quantities, and though refuse in the Bradford trade, they serve a useful purpose in the shoddy manufacture. There is a third product utilised, known as "extract wool," which is obtained by a chemical process, which destroys the cotton in union or mixed fabrics, leaving the wool uninjured. This process of destroying the cotton by the use of acids was discovered about twenty years ago, and is carried on both in Great Britain and the United States. There are now 137 shoddy factories, principally situated in the Yorkshire district, which employ over 5,000 persons, 3,000 of whom are females. About 40,000 tons of woollen rags are annually torn into shoddy in England alone, and the quantity made in the United States must be almost equal. No accurate data can be found of the European use of these articles, but an immense quantity of both shoddy and mungo is now made and exported from the Continent, principally to England, and it is probable that the whole of the world's annual consumption is over £7,000,000 in value. At the recent International Wool Exhibition, held at the Crystal Palace under my charge, there were shoddies sent from most of the States of Europe. Italy first began to work woollen rags into yarn, in 1858, and most of the other European countries followed the example. Let us pass to another important manufacture—silk. Nine years ago, in an article in the *Journal*, I drew prominent attention to the increasing employment of silk-waste, and I, therefore, need not go into any very full details. But still the subject deserves passing notice, from the trade importance it has attained. Raw silk having become scarce and dear of late years, much more attention has been given to the employment of the different sorts of silk waste, for which, at one time, scarcely any use could be found. The variety of these is very large, and most of them are now profitably and extensively employed. The outside and inside husks of the cocoons used to be mere refuse. These pass under various trade names in different countries; in England, as "knubs and husks" and "floss silk;" on the Continent as "*bouvre de soie*," "*frisonets*," and "*floret*." What is termed "yarn waste," is the waste made by the silk throwster. The pierced cocoons, that have been eaten through by the moths, are now largely employed in the preparation of "chappe," or "schappe." Then there is the noils and thread waste from the silk factories. In 1857, the

imports of these waste silks were only 18,000 cwt., valued at £302,286. In 1881, the imports reached 540,119 cwt., valued at £757,796. France, Switzerland, Germany, Great Britain, and the United States have now entered extensively into the utilisation of silk waste for manufactures, which was formerly a drug in the market. In the Swiss report on the Paris Exhibition of 1867, it was stated that the annual production of floss silk yarns then ranged in value from £400,000 to £600,000. In 1872, about 7,750,000 lbs. of thread were made from waste silk in Europe. In the United States, 2,000 to 3,000 bales of waste silk are used up annually, valued at £200,000. Italy exports annually about 5,000,000 lbs. of silk waste. At Manningham, near Bradford, Messrs. Lister and Co. have one of the largest silk factories in Europe, chiefly engaged in manufacturing articles out of waste silk that are scarcely, if at all, made elsewhere in England, such as velvets, hat plush, and ribbon velvets. There are 15 establishments in France, with 479,353 spindles, working up waste silk, that is, the waste from the cocoon not reelable, the short pieces, &c. What remains over from this working is again used up by some other factories, which by means of further combing and carding, employ waste formerly only partially utilised or altogether lost to consumption. In connection with this subject, I may draw attention to the stimulus given to the collection of the cocoons of the wild silk-worm of India, known under the name of Tusser. These which were formerly only used in the East for making a kind of drab or coffee-coloured silk, have now, through the exertions of the Indian Government, and the skill of Mr. T. Wardle, of Leek, been made to take dyes, and are profitably employed in the silk manufacture in England. The waste of the wild cocoons in China and Japan is made into felt for hats, and enters into the manufacture of paper. The improvements in machinery for the preparation and spinning of silk waste have made great strides of late, and whereas a few years ago one never heard of anything but "spun silk" hosiery, handkerchiefs, or some other little article of similar make, the whole world now knows the "schappe" velvets of Crefeld, the "spun" ribbons of Basle, and the laces of Nottingham, while the king of silk spinners—Lister of Manningham—has even produced machine-twist of excellent quality from this unlikely material. Let us look at the supply of raw material, and compare the facilities of twenty-five years ago with those of to-day. Then the European spinners had simply the choice of Canton gum waste, China curlies, Bengal chassum, Persian Balls, or Italian knubs and gum, with what little engine waste he could obtain from the throwsters of China raw silk here. This last, indeed, was often so lightly valued by the owner of the throwing mill, that the operatives were allowed to use it for cleaning machinery. Now we find that Japan alone furnishes at least four well-known kinds, pierced cocoons, knubs or curlies, the inferior outside layers of the cocoon, winders' waste, and floss silk, known among merchants as "caps," being the sheets used to protect the ends of the books or bundles of silk. The export of this silk-waste from Japan exceeds 27,500 cwt.

Designs on Cotton Goods—India.

The Manchester Chamber of Commerce has received the following communications from the India Office:—

[COPY.]
India Office, S.W., 19th December, 1882.

Sir,—I am directed by the Secretary of State for India in Council to transmit a copy of a notification of the Government of India prohibiting from 1st March, 1883, the importation into India of cotton goods impressed with designs in imitation of currency notes, promissory notes, or stock notes of the Government of India. This step was rendered necessary because cases had occurred of these designs having been cut out and palmed off on ignorant people as genuine notes.—I am, sir, your obedient servant,

(Signed) LOUIS MALLET.
The Secretary, Manchester Chamber of Commerce.

[COPY.]
No. 4,878, dated 10th November, 1882.—Notification by the Government of India Department of Finance.

In exercise of the powers conferred by section 19 of the Sea Customs Act, 1878, the Governor-General in Council is pleased to prohibit the importation into ports in British India of cotton goods impressed with designs in imitation of currency notes, promissory notes, or stock notes of the Government of India. This order shall come into force from the 1st of March, 1883.

The United States Tariff.

The following particulars of the report of the Tariff Commission, have been given by a New York contemporary:—

The Tariff Commission in its report points out the fact that excessive duties generally, or exceptionally high duties in particular cases, discredit our whole national economic system, and furnish plausible arguments for its complete subversion. They serve to increase the uncertainty on the part of industrial enterprise, and take from commerce, as well as production, the sense of stability required for extended undertakings. The report says it would seem that the rates of duties under the existing tariff, fixed, for the most part, during the war, under the evident necessity at that time of stimulating to its utmost extent all domestic productions, might be adapted through reduction, to the present condition of peace, requiring no such extraordinary stimulus. And in the mechanical and manufacturing industries, especially those which have been long established, it would seem that the improvements in machinery and processes made within the last twenty-years, and the high scale of productiveness which has become a characteristic of their establishments, would permit our manufacturers to compete with their foreign rivals under a substantial reduction of existing duties.

Referring to the importance of our manufacturing industry, the Commission states that while aiming to diminish the burdens upon the people which inevitably attend any system of collecting the national revenue, the Commission has not lost sight of the relations of a wise tariff system to the attainment of the highest possible material life of the nation; its security in times of war, both in its means of defence and industrial independence; its position among other nations; its acquisition of all the arts which fortify, enrich, and adorn; its attractiveness for the skilled labour of other lands, and the comfort and means of support of all its people. To show how momentous to these interests are the questions involved in a tariff revision, the Commission presents statements of the productive industries of the country for four decades, classified in accordance with the fourteen schedules in the tariff scheme submitted by the Commission:—

Year.	Number establish- ments.	Capital.	Average number hands.
1850.....	123,025	\$533,245,351	957,659
1860.....	149,433	1,009,855,715	1,311,246
1870.....	252,148	2,118,208,769	2,053,996
1880.....	253,840	2,790,223,506	2,738,950

Year.	Total wages paid.	Value of products.	Value of materials.
1850....	\$236,755,464	\$1,019,106,616	\$555,123,822
1860....	378,878,966	1,885,861,676	1,031,005,092
1870....	775,584,843	4,232,325,442	2,488,427,242
1880....	947,919,674	5,369,667,706	3,394,340,029

The progress of the nation in manufactures during the last forty-years is shown to be in capital invested, 423 per cent.; in hands employed, 186 per cent.; in wages paid, 300 per cent.; in materials used, 511 per cent; and in value of products, 427 per cent.

In the way of administrative reforms the Commission makes recommendations as follows:—

The substitution of a single entry fee at the Custom-house for the present numerous and annoying small fees; giving authority for certain procedures now adopted without the sanction of law; giving facilities for the importation of the personal effects of immigrants; giving authority that weights and measures in invoices shall be those of general use in the country of exportation; requiring that invoices of merchandise subject to *ad-valorem* duty be made out in the currency actually paid therefor, as well as that of the place from which importation is made; limiting the requirement of triplicate invoices to articles only subject to *ad-valorem* duties, making it imperative that before certifying to an invoice the consular officer shall require an oath, affirmation, or declaration that the invoices are correct; providing more equitable, rigid, and efficient penalties for undervaluations; providing for an appraisement, separate and distinct, in all cases; permitting the examination of bulky goods for appraisement at other places than the public stores, and other changes more particularly referred to in another part of the report; the repeal of the sections requiring the addition of inland transportation costs and charges to the basis of duty on *ad-valorem* goods; the establishment of a Customs tribunal for the determination of disputed questions arising under our tariff laws as to the classification for duty of imported merchandise.

Amongst the principal changes in the tariff schedules are recommended the following:—

Cotton.—The new schedule will simplify the present tariff—first, by the abolition of all compound duties; secondly, by the abolition of all contradictory sections and ambiguous expressions such as those alluded to, and the substitution of six divisions—two each for unbleached, bleached, and printed cottons. It has been necessary, in order to make an adequate specific duty on the higher-priced cloths, to make a distinction in the unbleached goods at above 8c. per square yard, in the bleached goods valued at above 10c. per square yard, and in the printed goods valued at above 15c. per square yard, and on these goods an *ad-valorem* duty of 40 per cent. is recommended. Instead of four divisions in the sections relating to cotton thread, yarns, warps, or warp yarns, the Commission proposes seven divisions: Below 25c. a pound, above 25c. and not exceeding 40c., above

40c. and not exceeding 50c., above 50c. and not exceeding 60c., above 60c. and not exceeding 70c., above 70c. and not exceeding 80c., and, finally, all cotton yarns valued at over 80c. a pound. There has been a general reduction of 25 to 30 per cent. on this schedule, with the exception of some of the finer grades of yarn, which have only been slightly reduced.

Flax.—While the Commission has made no change in the rates, except to reduce the rate on cotton bagging under 7c. per square yard from 2c. to 1½c., and above 7c. per square yard from 3c. to 2c., it has to some extent simplified the schedule, and removed some of the ambiguities in the phraseology of the law.

Wool and Woollens.—The reduction suggested on wool is the removal of the 11 per cent. and 10 per cent. *ad-valorem* duty on wools of the first and second class respectively, and a reduction of ½c. per lb. on wools of the third class valued at less than 12c. per lb., and 1c. per lb. if valued at above 12c. per lb. This arrangement is a reduction of fully 20 per cent. in the present duty. The classification of wools for duty under the existing law has been retained. The characteristic feature of this adjustment is the application of compound duties. While in the opinion of the Commission compound duties are generally objectionable, and their elimination is recommended in all the other schedules, there seem to be exceptional reasons for their retention in the schedule of woollens, although four Commissioners, viz., Messrs. Ambler, Porter, Underwood, and McMahon, refused to assent to the retention of compound duties in this schedule, or in any case. In the reductions in this schedule which the Commission proposes, ranging for the great bulk of fabrics from 18 to 40 per cent., the aim has been to make the reduction apply most effectually to the cheaper goods of necessary consumption, with a view of benefiting producers as well as consumers; for reasonable prices to the consumer mean increased consumption, and of course correspondingly increased stability and lucrative employment to the producers. Comparatively less reduction is proposed on the finer, lighter, and more costly cloths, involving more labour in their production, upon the ground of public policy which demands the encouragement of the higher branches of manufacture.

Silk.—The slight changes in the phraseology and classification of the silk schedule recommended by the Commission were inspired by a desire to simplify construction and to facilitate its enforcement. Specific duties have been substituted for *ad-valorem* duties wherever the former could be made to apply. The duties recommended indicate a reduction from existing duties of something more than 23 per cent.

In the draft of the bill appended, the Commission has recommended that at least one of the judges of the proposed Customs Court should be a Customs expert of at least ten years' experience in the service. With a view to simplifying the mode of proceeding and hastening the decision the Commission has recommended that, unless the Court shall otherwise direct, no pleading shall be necessary except the papers sent up by the collector on the appeal, believing that the decision of the collector and the protest of the importer will ordinarily be all that is necessary to make up the issue; and has provided that, except for cause, the decision shall be entered within ninety days of the appeal.

Spinning and Weaving Mills in Japan.

The erection of spinning and weaving mills in Japan, says the *Japan Gazette*, seems to fascinate the native mind. Various projects, all more or less unsound, have been put forward from time to time for yarn factories, but none of them appear to have succeeded, owing to the expense of manufacture and the necessity of trusting mainly to the importation of raw material. It is reported that another effort is to be made, this time to combine weaving with spinning. Mr. Kato Kuro, in conjunction with Mr. Ogura Manjiro in Tokio, proposes an establishment with 10,000 spindles, and weaving machinery has been ordered in England. The capital of the concern is to be 350,000 yen. This is said to be the first company to attempt the weaving industry by machinery; and the works are to be entrusted to the management of Mr. Kumagoye, who has undergone a course of instruction in spinning and weaving at Messrs. Vernon and Freemantle's mills, in Manchester, and at a weaving factory in Blackburn. The Yokohama paper considers that the scheme has a better prospect than its predecessors, for "while the manufacture of yarn can scarcely pay so long as the manufacturers are compelled to trust to their own supply of fine-staple native cotton, or to import raw cotton at prices subject to great variations, independent of the manufactured product, the weaving of yarn into cloth is a process which ought to benefit all engaged in it if it be carried on with skill and economy." A native paper suggests that the scheme is designed to afford a means of livelihood to the ex-retainers of the petty military chieftains and to check the importation of cotton fabrics. But the *Gazette* considers it to be extremely doubtful whether men entitled to regard themselves as of a superior class can ever settle down to the most arduous and persistent labour known; and adds that it is only by cheap labour that the price of the manufactured cotton can be made to compete with that imported.



ORIGINAL DESIGNS.

We have pleasure in drawing the attention of our readers to our first plate which shows an excellent design for a Toilet Quilt. It has been drawn by Mr. W. R. Foster, Shandon Place, North Merchiston, Edinburgh.

On our second plate we show a design of an Indian character, which is intended for a Royal Axminster Carpet. It is, however, equally adaptable for a five frame Brussels or a Kidderminster Carpet. This design is the work of Mr. R. Lord, Gerrard Street, Halifax.

Three Border designs form the subject of our third plate. They are offered as suggestions to manufacturers of Dhooties, but will also be useful in many other branches of the Textile Manufacture. These are also from the pencil of Mr. R. Lord.

** We beg to inform manufacturers and others that adaptations of designs, published in the "Journal of Fabrics and Textile Industries," can be made at the Office by experienced Designers, and that Original Designs can also be furnished at moderate charges.

Trade Reports for 1882.

Wool.—At the opening of the year, as a rule, manufacturers of all classes of Worsted and Woollen goods held very light stocks of wool. At the commencement of the London sales, there was a good demand for wools, prices advancing for nearly all classes. The lower qualities of Capes met with the least demand, prices being slightly lower. At the second series the sales opened very firmly and prices remained steady from the commencement until the close. The lower class of Capes again experienced a decline both in demand and value. This latter fact being due to the low prices at which English grown wools were selling. The third series experienced an average competition. The fourth series opened weaker both in demand and prices, the greatest reduction being in Australian wools. The better class of Capes brought full rates, but the lower qualities again declined, as the sales proceeded, prices gradually increased until, at the close, rates ruled as high as at any of the series during the year. To dealers in English wools the year 1882 has been one of great depression, and in every branch of the trade the business done has been of a very unsatisfactory nature. Prices have not ruled so low for more than thirty years; stocks in the hands of spinners have been very small, only their absolute requirements inducing them to buy to any extent. In the months of March, April and May a better feeling pervaded the market, but yet little speculation took place, the buying being for immediate consumption. As the year advanced the trade slightly improved, but in August the demand slackened, and from that month to the end of the year the business passing was of a very restricted character, prices in consequence having a weakening tendency. Woolstaplers have, on the whole, been, during the year, in an unenviable position. Notwithstanding the exceedingly bad trade that has been experienced during the past year, a hopeful feeling pervades the markets; which has been caused by the favourable aspect put upon the United States part of our trade, by the statement made in regard to the tariffs, by the President of the Republic.

Yarns and Pieces.—During the first three months of the year the yarn trade, both for home and export, was of a very dragging character, orders were difficult to secure, and when received were of a very unremunerative nature. Spinners had great difficulty in running full time unless at their own risk. Prices have during the greater part of the year ruled against them. In April business slightly improved, but prices still ruled low. In Botany yarns an improvement, which continued during May, June, July and August was experienced, but with the usual difficulty to procure remunerative prices. During the remainder of the year the trade was marked by apathy. In the piece departments, the fabrics most in demand have been those made from the finer classes of wools, and those having a great novelty in design. The ordinary run of plain and fancy worsted goods, have had a rather limited demand. The export trade has been of a restricted character, the largest amount of business being done with the United States. Prices have, as in other departments, been of an unremunerative character.

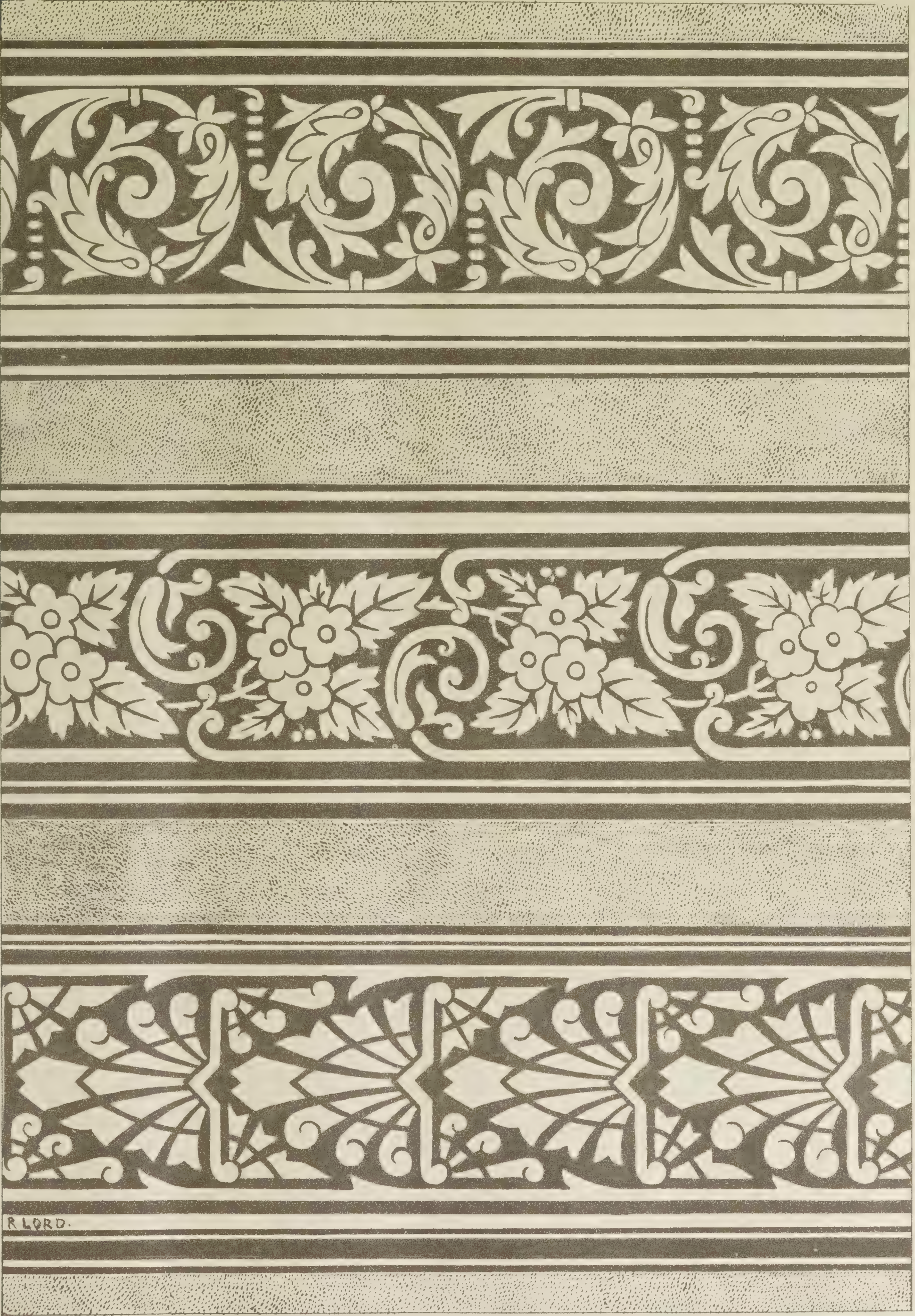
Cotton.—The cotton industry has not, during the year, been in a very satisfactory state. The raw material has varied considerably in price. The highest price was reached about the end of September. The greatest fluctuation in prices was in Egyptian Cotton, owing to the war. The lowest price realised was 6½d. in February, and the highest 10½d. per lb. in August. In American, prices have been slightly above the average. The market for yarns and goods has been of an unremunerative character. Spinners, manufacturers, and merchants have experienced most anxious times during the year. No severe fluctuation in prices have occurred. The India and China trade has been very disappointing to merchants from

various reasons, the general complaint being that the margin for profit was so small that it was with the utmost difficulty that a small income could be made. The Chinese have taken a smaller quantity of goods than usual, owing to the agricultural depression in the country, and in consequence, more than customary attention has been given to India, with the inevitable result that the goods sent to the latter country overstocked the market, which in the long run, coupled with other reasons, caused a stagnation. The trade done with other countries has been of a fairly satisfactory character, prices being more remunerative than in the above named places. The outlook in this branch of our textile industries is, on the whole, brighter than it was at the commencement of 1882, and should affairs improve slightly in India and China, the hopes of those engaged in the trade of better things would be considerably heightened.

Linen.—Trade in 1882, while in most respects better than that of the preceding year, has not been altogether satisfactory, and the hopes cherished at its commencement have not been fully realised. At the beginning of the year trade was of a satisfactory nature, and the demand for goods on the increase, but towards April the improvement ceased, and the business was of a flagging nature, prices drooping to a certain extent. In the autumn, trade somewhat revived, and a fair demand for goods of most classes was experienced. The home trade has been the least satisfactory branch of the industry, but the export trade has been pretty well maintained throughout the year, which has been a source of gratification to all concerned. The jute trade experienced a fair demand towards the end of the year of a remunerative character, although the business done for the first six months was of a very dragging nature. Undoubtedly the protectionist policy on the Continent has militated considerably against this branch, but the trade seems to be gradually overcoming this, owing to jute fabrics being in greater request than formerly. With regard to the prospects for next year, so far as the linen trade is concerned, they are not so cheerful as could be desired. On the other hand, the jute branch gives promise of continued activity.

Woollen.—When taken in contrast with the worsted trade, the woollen industries in Leeds and Huddersfield have, during the year, been of a very satisfactory nature. The latter town has perhaps experienced the greater amount of prosperity; nevertheless, the former town has, on the whole, enjoyed a fair share of success. At Leeds, at the commencement of the year, business was characterised by great activity, spring goods were delivered early in the year, and large contracts entered into for winter goods, which were delivered early, many firms running overtime in order to do this. Unfortunately the weather in August and September materially affected the harvest, and in consequence the trade fell off for a time. October was a very quiet month, but a slight improvement took place in November, and continued during the last month of the year. In the export branch of the trade, Leeds and the neighbourhood have been seriously affected by the French treaty ceasing to exist. The districts which produce the finer qualities of goods have not been so much affected as those where the lower qualities are produced. The export business with the western countries of the world has been of a very satisfactory character, an increased quantity of goods having been taken in nearly all departments. In Huddersfield goods of all classes have been produced in larger quantities than in any preceding year, and larger quantities have also been sold at fairly remunerative prices. In worsted coatings large sales have been effected both on home and foreign accounts, this branch of the trade, especially in the finer qualities, having been exceedingly brisk. In cheap tweeds a good demand has also been experienced, at remunerative rates. With regard to the export branches, the part of the report referring to Leeds equally applies to Huddersfield. In the heavy woollen district business has not been satisfactory. During the first three months of the year the production of woollens was heavy, owing to the expiration of the French Treaty, but after that time business suddenly fell off, and has been during the remainder of the year (with slight exceptions), of a dragging character. Worsteds and Cheviots have been most in demand, and towards the end of the year increased slightly in favour.

Carpets.—The year 1882 has not been one of good results for the carpet trade. There has been excessive and some are inclined to say unfair competition in this industry, and though there has been a very large production, it has only left behind it a minimum result in the way of profit. The best to be said of it is that those engaged in the trade have been able to hold their own fully as well as those in other industries, and despite of great difficulties. The colonial trade has been better than in previous years, but taking foreign countries generally the tendency has been more and more against the British producer. High foreign tariffs account very much for this. France, where English carpet manufacturers once did a good trade is almost closed against us, Germany and Spain put on more duties, and the United States obstacle to commercial intercourse is well known. At one time fully a fourth, some say a third of carpet looms of Kidderminster were running on American account. Only a shred of this trade has been left, but it so happens that in the past year there have been rather more English carpets going out to the States than in years immediately preceding. An alteration in the United States tariff is imminent, as the Republicans intend by the measure before Congress to anticipate any more drastic change by their near successors the Democrats, whose Free-trade leanings are well known. Whether this alteration may tend some little in favour of the English carpet trade remains to be seen; but one thing is certain, it cannot make the situation worse. As to the home carpet trade, there was a fair trade doing in the earlier part of the year at a moderate profit. When this fell off prices were disorganised, and under the influence of excessive competition an unsatisfactory state of things was created which has more or less continued to the present time. There has been a good deal of fluctuation in the experience of individual firms, and a marked difference of opinion prevails at the present time as to the prospects of the future. Some are sanguine about the new year bringing an improvement, while others take a very gloomy view of things.



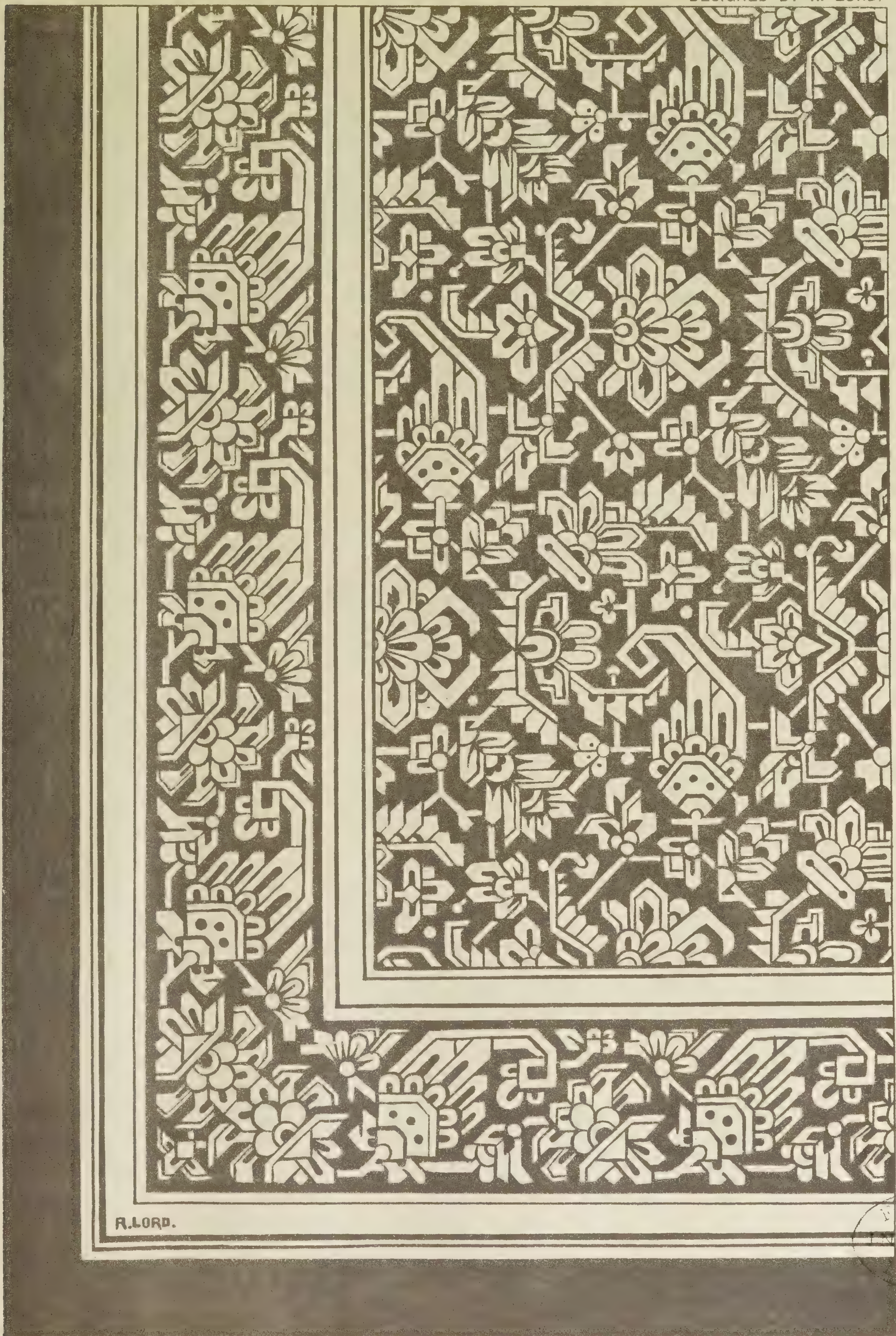
R. LORD.

BORDERS.



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TOILET QUILT.



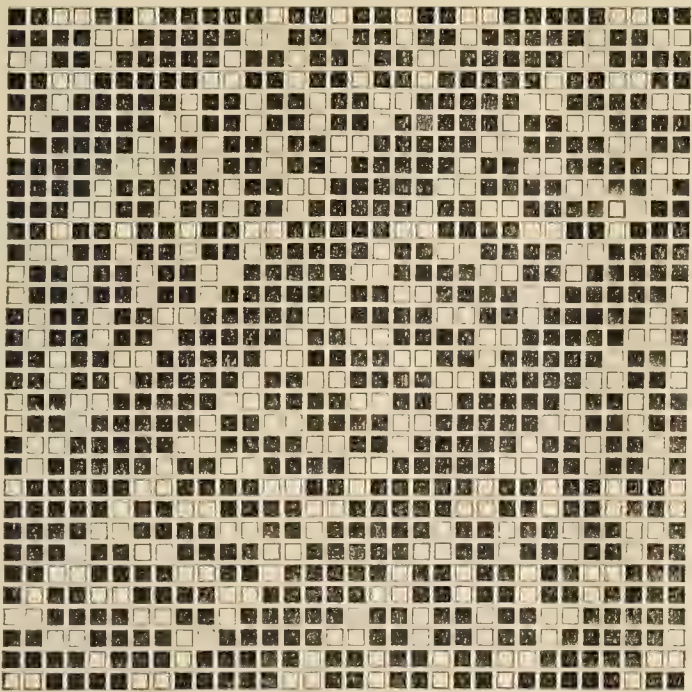
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ORIGINAL DESIGNS.

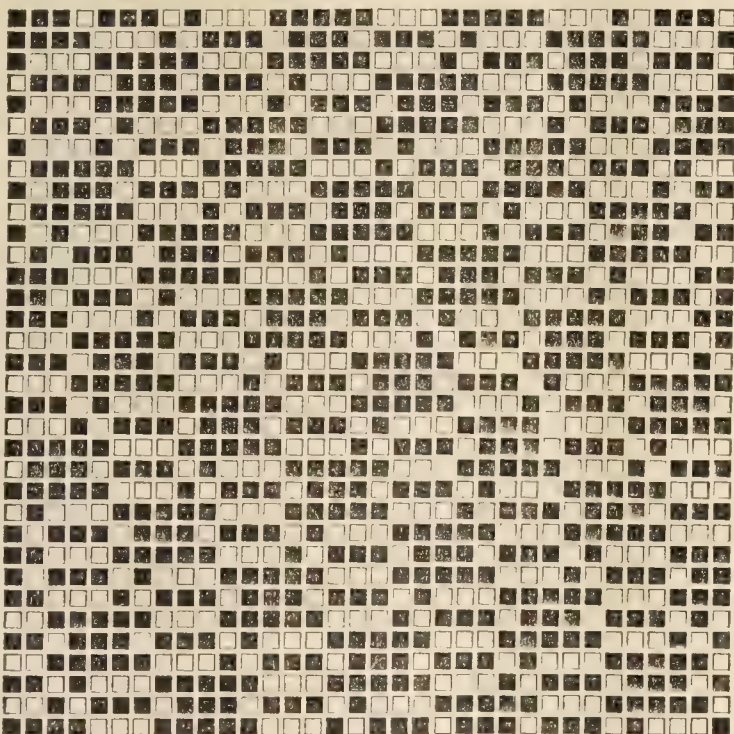
Coatings.

No. 29.



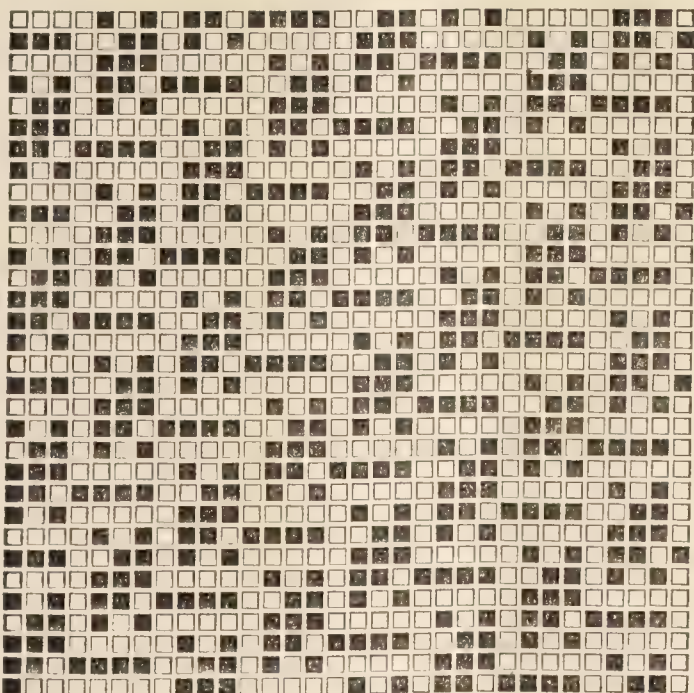
No. 29 is a
32-end Diagonal
pattern for
a Union Cloth,
with cotton
warp.

No. 30.



No. 30 is a
34-end Dia-
gonal pat-
tern which
also forms a
a Cord, for
a Union
Cloth, with
cotton warp.

No. 31.



No. 31 is a
Diagonal pat-
tern of 32
shafts loomed
straight gate
over.

The annual abstract of bills of sale published in connection with *Kemp's Mercantile Gazette*, gives the total for the year as 44,490 against 53,878 in 1881. There is a decrease under each classification, excepting only the jewellery and fancy trades, which show an increase of 413. Another noteworthy feature is a generally steady decrease during the closing months of the year. In this respect the year contrasts very favourably with 1881, when there was an equally marked increase towards the close of the year.

The Institute of Patent Agents.

The inaugural meeting of the newly constituted Institute of Patent Agents was recently held at 57, Chancery Lane, London. The Association which was incorporated in August last, and which we at that time noticed in our columns, bids fair to become of great benefit to Patent Agents and Inventors. At the meeting, the interim report of the Council was read and then the President (Mr. H. Johnson) delivered his inaugural address in which he recapitulated the objects for which the association has been formed and gave a full resumé of the rules, &c., of the Institute, and afterwards stated the advantages that would certainly accrue in having such a constituted body. The address we should much have preferred to have given in *extenso*, but the space at our disposal forbids; we, however, cannot refrain from giving the following extract which will be of especial interest to those readers who are interested in patents generally.

"Patent Agents are accustomed to be consulted by inventors, not only on the policy of securing their inventions by Letters Patent, but upon their commercial dealing with the inventions after they are protected; and our clients are entitled to expect from us the most honourable and straightforward advice. One part of our duty is to restrain them from rushing into litigation when their Patents afford no fair grounds for such a course. We all know that the inventor has an extreme idea of the value of his own invention; and we can all repeat instances of clients who cannot understand that the consideration of their particular invention is not the most important subject of the moment. Patent Agents are also very frequently in a position of much delicacy as regards the claims of rival inventors, through the feeling of jealousy which one inventor has of another. I believe that, where the Patent Agents employed are men of honour and position, there is little ground for any jealousy of this kind. I have frequently found that the knowledge I possessed of rival inventions and rival inventors, which was confined to my own office, has been of great benefit by enabling me to warn subsequent inventors of dangers they might otherwise have rushed into. There has also been considerable difficulty at all times in the selection of proper scales of charges for procuring Patents and for other services in relation to Patents; but I think the members of an Institute of this kind may, by communication with each other, agree on what should be fair to themselves and to their clients. This subject is a kindred one to that of the charges of solicitors, as to which there has also been much recent discussion, finally concluded by an Act of Parliament, in the preparation of which the Law Institution had no small part. It is our great wish to do every thing that can be done to maintain the honourable position of Patent Agents, and to give them a place in the estimation of the Public, which has scarcely yet been fully attained. If this Institute can attain the position of a central authority, we shall do much to effect the objects I have mentioned; it being our desire, on the one hand, to provide a check against all irregularities in professional practice, and on the other hand, to secure to the members of the Institute that fair consideration from their clients to which they are entitled." The President afterwards proposed that Mr. G. G. M. Hardingham, C. E., a Fellow of the Institute, should be appointed Honorary Secretary to the Institute, as a slight tribute for the able manner in which he had fulfilled the duties of Secretary during the formation of the Association. Undoubtedly Mr. Hardingham has filled the temporary office to the satisfaction of all concerned in the undertaking, and with great credit to himself, for as the President said, "The amount of labour involved in the preparatory work of forming such an Institute can hardly be calculated, but by the person actually performing the work." The duty of preparing the Articles of Association, was, we understand entirely performed by Mr. Hardingham, who has shown in his work that he is thoroughly efficient as a Patent Agent.

The above motion was carried unanimously, and after numerous addresses, the meeting which was entirely successful, terminated.

A New Yarn of varied Shades.

In a recent number of *Le Jacquard* an account is given of a new invention in the arrangement of different colours in yarn, by which a single thread of many and varied shades is formed; no dyeing after spinning being necessary. The single thread comes from the rollers with one shade following another, or one colour after a different colour. In order to obtain this desirable product, spinning laps (*nappe*) must be prepared by the picker and the second breaker; each lap having one desired colour, and they must be so arranged as to follow each other in the formation of the thread. When the different coloured laps are ready, they are cut into desired lengths, and placed across the table of the three set finisher, where they are joined together. This arrangement is so continued as to form a scale of shades or contrasts of colours, and the order may be more or less arbitrary in accordance with the effects sought. As soon as the laps from which the thread is to be formed by joining the different coloured laps are ready, the finisher will produce a roving formed of a single and continuous thread, with a succession of various colours through its entire length; and these will appear in the same order as the laps were arranged and placed upon the table of the finisher.

Manufacture of Textile Fabrics in Russia.

During the long winter in Russia the peasant men and women employ themselves in weaving linen, canvas, &c. They spin the thread in the ancient manner with the distaff and with the spinning wheel. The product of their winter industry is either bought by dealers, or women carry it about and offer it for sale in the same manner as the hawkers of Irish linen did formerly in England. The linens of Russia, although excellent in quality, lack the finish which is imparted to the Irish, Belgian, and German linens, which form an important article of import. The foreign linen trade in Russia has acquired some notoriety for the unscrupulous manner in which the goods are advertised in the newspapers, displaying the most extraordinary puffing announcements, and giving one anything but a favourable opinion of the sellers. In heavy goods, such as sailcloth, raven-ducks, crash, England cannot compete with Russia, and these articles, owing to their superior quality, find a market in this country. The well-known article called crash (a corruption of the Russian designation *khriastch*, gristle) is packed in bales of 1,000 archine, of 750 yards, or in half-bales, and is distinguished by the following names and numbers: the superior qualities, Mejeoumok or Ms', Golofka or Gs', and first, second, third, fourth, and fifth qualities. It is perhaps not generally known that the manufacture of textile fabrics in Russia has reached a high degree of perfection and excellence. It is only the finer quality of goods, and mostly those that are subject to the changes of fashion, that are imported from abroad. Some of the higher qualities of woollens are equal to anything manufactured in England.

The official report of the goods exhibited at the several industrial exhibitions held in Russia within the last ten years gives the following estimate of them: "(1) The woollens and worsted articles were very numerous and of excellent quality. (2) The muslins were remarkably fine, and the patterns light and tasteful. (3) The prints and chintzes were also remarkably good." We may note here that the cotton prints for the home and Asiatic market manufactured in Russia undergo an unusual amount of calendering, a bright gloss being indispensable.

"(4) The silk goods were abundant and of fine quality and colours. Among them may be specially noted the magnificent tissues of silk interwoven with gold and silver thread for ecclesiastical vestments, gorgeous alike in material and in richness of design." We may remark that foreigners, without any veneration for things sacred, purchase largely of this cloth of gold and silver for the purpose of making window curtains and covering drawing-room furniture. Much of this is extremely beautiful in design and workmanship. From the numerous patterns, many of which are commonplace and gaudy, there is no difficulty in selecting specimens of genuine old Byzantine ornamentation.

"(5) The velvets and carriage-lining silks and furniture silks were magnificent. Of the latter one firm are said to sell annually 2,000 pieces of furniture silk for English consumption, the designers and workmen employed on which are exclusively Russian. Not only the richer description of goods, but plain silks and satinettes appeared excellent in colour and quality and moderate in price. Ribbons have not as yet attained equal perfection; the supply is obtained chiefly from France." It has been stated, on Russian authority, that so well developed is the Russian silk manufacturing industry that considerable quantities of Russian silks are sold in various markets of Southern Europe as Lyons silks."

Foreign goods are consumed only by the wealthier classes in Russia. England exports to that country the finer quality of cottons in great variety, woollens (principally heavy goods and fancy trouserings), and Irish linen. In silks there is very little done between the two countries, France supplying this article almost exclusively, especially ribbons, as we have just stated. Among the articles of English manufacture imported into Russia may be mentioned carpets, chiefly velvet pile, which are found in the houses of the wealthy only, like English fireplaces. As a rule, the fashion of parquette floors, which, when well polished, is in itself highly ornamental, precludes the necessity for carpets covering the whole of the room; a good-sized square carpet of velvet pile in the drawing-room is all that is required. There are a few manufacturers of carpets in Russia, both of velvet pile

and Brussels. Tapestry carpets are also made from imported English yarn. The patterns are mostly copies of English designs, and the prices are very high. Felt carpeting has had a good sale in Russia, owing to the low duty on that material. Among the miscellaneous articles exported from this country to Russia may be mentioned felt hats, Scotch caps, travelling rugs, plaids, umbrellas, woollen gloves, neckties, perfumery, &c. Kid gloves are extensively manufactured both at St. Petersburg and Moscow, principally by French firms employing Russian workmen and workwomen. Large quantities are made of (so called) lamb-kid. The price of the best goods are about the same as they are in London. Latterly, the manufacture of gloves from reindeer-skins, prepared like washleather, has received a considerable impetus in Russia. What is termed haberdashery and smallwares is nearly all imported from England and Germany, there being only a few native manufacturers of these articles in the capitals and in the interior. Gentlemen and ladies under-clothing for the middle and upper classes is made entirely of Irish and German linen, in which the most exquisite taste is displayed. The stocking manufacture is almost unrepresented in Russia. It is only the middle and upper classes that wear this article, which is chiefly imported from England and Germany; the peasantry, who form the bulk of the population in Russia, are stockingless, the covering adopted for the feet and legs being linen swathings.—*Warehousemen and Drapers Trade Journal*.

The Prospects of Trade in the Corea.

The following extract taken from the report of Mr. Aston and forwarded to Sir Harry Parkes, British Minister in Japan, gives information collected during a recent visit to the three principal Ports in the Corea:—

"The imports to Wönsan in the Corea, consist chiefly of shirtings, muslins, and other piece goods, which are almost without exception of English manufacture. During the half-year, ending June, 1882, these articles were imported to the value of 285,233 yen (150 to 170 yens being equal to 100 Mexican dollars); or about four-fifths of the total imports. As the national costume consists of flowing garments of a white or greyish cotton material, it is highly probable that the import of shirtings and similar goods will be large in proportion to the number and means of the population. A preference is given to the better qualities, but I was told that no American shirtings reached this port. The only other important import is European dyestuffs, of which 19,549 yens' worth was imported. Japanese imports only reached the value of 6,773 yen, but to this should be added the greater part of the articles imported for the use of the Japanese residents, which amounted for the half-year to 5,623 yen. The most important fact to be noted in regard to the foreign trade of Wönsan is that seven or eight tenths of the goods imported are for the consumption of the cities of Söul and Ph्योंgyang, which can be far more conveniently supplied from In-chhön when that port is opened to trade, and that the gold and silver, which are so prominent articles of the export trade, are produced in Ph्योंgando, the province on the west coast bordering on China. Shirtings can be sent from Wönsan to Söul on pack horses in six days, each horse carrying a load of 25 to 50 pieces, according to his size and strength. It should be added, however, that Mr. Mayeda, the Japanese Consul-General for Corea, who spent two years at Wönsan, has a high opinion of its capabilities for commerce, and does not believe that the opening of In-chhön will greatly check its prosperity.

"The Japanese at Wönsan complain loudly of the difficulty of doing business with the Corean traders. They say that it is impossible to give them credit, that the petty officials and interpreters levy an exorbitant blackmail on even the most trivial transactions. In the agricultural districts, it is said that the peasants are often prevented by the same class of Coreans from sending their rice and pulse to the Wönsan market for sale to the Japanese, and that in consequence the crops are sometimes allowed to rot in the fields. Japanese money is not current outside the settlement, and even in Wönsan all purchases have to be made by means of the inconvenient Corean copper coin. The trade of Wönsan is carried on chiefly by the Mitsu Bishi steamship Tsuruga Maru, which visits the port monthly. An occasional schooner or junk is also sometimes seen here. The Tsuruga Maru goes on to Viadivostok, where there is a colony of 200 or 300 Japanese engaged in commerce, and there appears to be some probability of commercial relations springing up between the two places.

The following table shows the value of the imports and exports to and from Pusan for the four years 1878-81:—

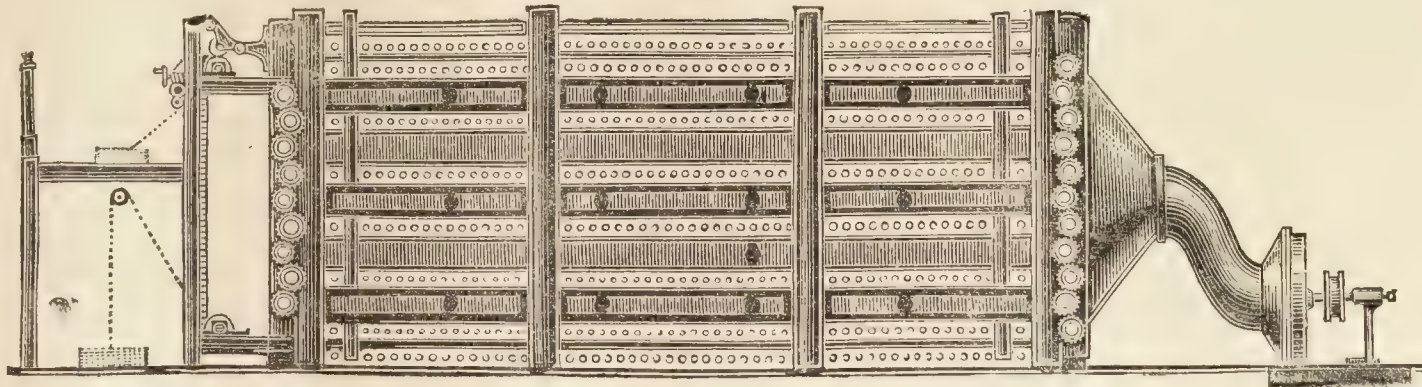
1878.	Paper yen.	1880.	Paper yen.
Imports	205,281	Imports	1,237,792
Exports	244,545	Exports	730,768
Total	449,826	Total	1,968,560
1879.		1881.	
Imports	677,062	Imports	640,233
Exports	566,955	Exports	572,951
Total	1,244,017	Total	1,213,184

Among the imports for 1881 there were European goods to the value of 470,971 yen, of which 250,000 yen represented shirtings alone. American shirtings to the value of 6,000 yen were imported during the year. Goods imported from Wönsan amounted to 39,138 yen. This sum included oxhides to the value of 13,371 yen, which were brought to Pusan in Japanese ships—a practice which is not prohibited by the Japanese Treaty, as it is in that negotiated for America by Commodore Schufeldt. Japanese schooners sometimes visit the unopened port of Masanpho, but I was told by the Consul that this was only when driven by stress of weather, and not for purposes of trade. The falling off in the trade of Pusan in 1881 is due to the opening of Wönsan in May of the previous year. The trade of the two ports may now be considered nearly equal, the gross imports and exports for each amounting to about 1,000,000 dollars. At all the places I visited I conversed with large numbers of Koreans, and found them invariably friendly, though sometimes inclined to be unpleasantly familiar. Their desire for information knew no bounds. I should not omit to report to you the friendly assistance which I received from Mr. Mayeda, the Japanese Consul-General at Pusan, and Mr. Sayeda, the Japanese Consul at Wönsan. To their courtesy I am indebted, amongst other things, for nearly all the information on the foreign trade of Corea which is contained in this report."

MACHINERY, TOOLS, &c.

Craven's Patent Air Drying & Tentering Machine.

Our attention has been drawn to a patent air drying and tentering machine manufactured by Messrs. F. Craven and Co., Brighouse, Yorkshire. In the drying of various kinds of fabrics, yarns, &c., by the use of heated pipes, chests or heated cylinders, it is too often the case that the great heat which is required to dry the materials rapidly, act upon them in an injurious manner, and to a great extent dry, scorch, and often discolour them, in consequence the marketable value of the goods is often reduced. The nearest approach to drying and tentering by natural means is of course the best, and Messrs. F. Craven and Co., claim that with their patent machine in treating both textile fibres and fabrics they ensure a uniform and regular system of drying and tentering, by which the materials acted upon are in no way injuriously affected, and that the soft and elastic feeling produced by the natural process is ensured by the use of their machine, this desideratum being attained without injuring the colours or fabric in the slightest degree. It is acknowledged that the old fashioned system of drying and tentering is too slow in our present time, and that the quicker the method (without injury to the material), the more satisfactory the system is to the manufacturer. The principle of the machine, an illustration of which is given, is to draw air from



any number of air chambers. The top and bottom (or both if necessary), of each separate air chamber is formed by the fabric, material or fibre to be dried. The sides are made of wrought or cast metal or any other air-tight casing, that is to say, the machine is closed at the sides of the air chamber only, and opposite end of roller if needed. To these air chambers, a powerful exhaust fan is connected, which, providing the top and bottom of the air chambers were air-tight, a vacuum would be formed. This not being the case, but the top and bottom or both being covered with the porous fabric or material required to be dried, the air in its passage from the room where the machine is placed, rushes completely through the porous fabric or material to fill this space in the vacuum box, thus causing every thread to be thoroughly, properly, and evenly dried while the fabric or material is in motion, and avoiding injury to the colour, and preventing scorching, harshness, brittleness and an artificial feeling in the material. Heated pipes can be placed over each separate chamber if required, to enhance the speed of drying, to which the cold air of the room has free access. The air is not drawn through more than one thickness of fabric or material into the vacuum boxes or air chambers, but passes direct through the fabric or material into the vacuum boxes or air chambers, then into the fan and is expelled outside the building altogether, thus obviating any damp or moisture passing through the substance dried, and carrying all moisture and smell entirely away. The fabric required to be dried and tentered, is placed on a suitable platform situated so that the fabric can be pricked by its selvedge on to gills, which are attached to movable endless parallel chains by means of indiarubber pressure rollers or circular brushes, previously passing through a slay or grip roller and over a breast beam which is placed near the top of machine. The chains now moving upwards will stretch the fabric in length according to the pressure by which the slay rollers hold or retard the fabric. In order to get the fabric stretched to the proper width, the movable endless chains work forwards in grooves or slides which are attached to a pin or stud, about 20 feet from the breast of the machine; thus allowing the chains at the

place where the fabrics are pricked on to be brought any required distance nearer to one another than the required width of the fabric when dried, the further the pin or stud is placed from the breast beam the more gradual the stretch in width. The chains travel horizontally at the required speed with the fabric attached, in a direction from breast of machine, any required length passed around a roller, and then travels horizontally in a direction towards the breast of the machine the diameter of a roller lower down. The slides holding the chain being connected to one another and the casing between being air-tight, the fabric now makes one air chamber or vacuum box complete. Any number can be added according to size of machine required, and connected with the fan before mentioned. These slides and air chambers are all connected together by suitable rails and screws. The screws are right and left hand threads, causing the right and left hand slides, air chambers, etc., to move to and from one another, so that either broad or narrow fabrics can be tentered or dried. The width of the machine is easy to regulate. The endless chain after passing along the last air chamber slide comes out at front and passes up on to the breast beam roller, continuing its course as before described. The piece, meanwhile having been stripped off the chain gills as it passes up, is folded by suitable rollers under the platform or any other convenient place, being dried in quite a natural state. The machine is easy to work, very substantially made, not liable to get out of repair, constructed of the best material, and fitted up in a thorough workmanlike manner, made in either small, medium, or large sizes, according to the thickness or thinness and quantity of fabrics required to be dried, and the cost is in proportion to size of machine. The machine can be seen at work by applying to the sole makers at the address given above.

The Use of Muriate of Lime in the Scouring of Wool and Woollen Fabrics.

The following account of the use of Muriate of Lime in the scouring of Wool, &c., is given by *The Dry Goods Bulletin*, which has been translated from foreign sources.

Wool washed on the back, and still more so dead wools treated with lime, and grease wools scoured and washed in river or well water, contains to a more or less degree calcareous soap. This calcareous soap renders difficult and often impossible the scouring and washing of wool, either loose or in the shape of tissues such as cloth, felts, blankets, hats, etc. The object which the inventor has had in view has been to free wool of whatever origin and in whatever shape, of this calcareous soap, and all

tissues containing such. For this purpose, muriate of lime with an acid reaction is used, which is produced direct either by putting lime into an excess of hydrochloric acid, or indirectly by pouring hydrochloric acid into calcareous water, or, finally, by using hydrochloric acid diluted with water freed of calcareous salts. The solutions are prepared as follows: They are made up of one to three kilos acid to every one hundred kilos of calcareous water, or if the water is freed of calcareous salts, the same is slightly acidulated. It should, however, be added that the proportions indicated above are by no means absolute, but depend on the amount of limestone contained in the wool or tissue. The one or the other of these solutions is then made use of to the following effect: 1st.—Wools washed on the back or treated with lime, whether beaten or not prior to scouring, are immersed in these baths. They are allowed to stay therein for about thirty minutes while being stirred from time to time. They are then passed between cylinders, the scouring going on in the usual way; finally they are washed in water freed of calcareous salts. 2nd.—Grease wools, beaten before scouring, can be immersed at once in one of my baths; if not, it is better to place them in one of these acid baths after a preliminary scouring, which, in my estimation, should precede the scouring, properly speaking. In both cases the wool still passes between rollers, and, after the ordinary scouring, it is washed in pure water. 3rd.—As for wools scoured in the ordinary way, nearly always containing calcareous salts, it

is evident that these can be got rid of by treatment with my baths, as has been previously stated. 4th.—With respect to cloth and other woollen tissues, whatever they may be—either all-wool or mixed—use is made indistinctly of one of the baths indicated, which are poured into the scouring or fulling tub, in the proportion of about 200 litres to every 2 pieces. After working the wool or tissues therein for half an hour, the bath is drawn off, and the pieces are then worked dry so as to wring out the liquid as much as feasible, and the scouring is proceeded with immediately, either with crystals or soap, and finally the washing takes place in water not calcareous. This applies as well to wool before it is dyed as to pieces to be dyed. Dyed wools and tissues cannot, of course, be so treated, unless the colouring matter be proof against the action of the bath. By way of summing up, the inventor applies for a patent for the process of submitting loose wool or tissues containing such to a reaction well-known in chemistry, the one produced by an acid which, together with soap or a calcareous soap, forms a soluble composition removed by washing in pure water. This reaction is applied to the different operations of cloth manufacture. Beside the operations pointed out, these baths may still be used for washing tissues. Scouring is facilitated thereby in a striking manner.

Bankruptcy Legislation.

A petition on the subject of bankruptcy legislation has been drawn up by the Mercantile Law Amendment Society of London in view of the intended introduction of a bill by the Government next session, for the reform of the Bankruptcy Act, 1869. The petition draws special attention to the desirableness of provision being made for the following objects:—1. That upon the presentation of a petition either for bankruptcy or liquidation by arrangement, an officer of the Court shall take possession of the debtor's property until the first meeting of the creditors. 2 That whilst the creditors shall have perfect freedom to appoint any fit person they think proper to act as trustee of the estate, every such trustee shall be made to give security, shall be paid for his services under a fixed scale of charges to be framed by the Board of Trade, and shall periodically submit his accounts to the Comptroller in Bankruptcy for examination and audit. 3. That no bankrupt, or liquidating debtor, shall be entitled to his discharge until he has passed his examination, nor unless his estate pays a dividend of not less than 10s. in the pound, except where the Court, upon satisfactory evidence, is of opinion that his inability to pay the required dividend has arisen from circumstances for which he ought not to be held responsible. 4. That it be made a criminal offence on the part of an undischarged bankrupt if he obtains goods upon credit to the extent of £20 without informing the person from whom he gets such credit that he has not received his order of discharge.

ODDS AND ENDS.

In future our Scientific and Art Notes will be placed under the heading of Odds and Ends.

The rates of commission chargeable on money orders issued on foreign countries, British colonies, and postal agencies abroad, are now as follows:—For sums not exceeding £2, 6d.; above £2 and not exceeding £5, 1s.; above £5 and not exceeding £7, 1s. 6d.; above £7 and not exceeding £10, 2s.

In this international age it will excite little, if any, surprise that the Japanese Government have decided to send a large painting on silk to the Amsterdam International Exhibition next year. The silk will measure 12ft. by 7ft., and has been ordered from the manufactory of Nishijin, Kyoto. The painting—a representation of Buddha suppressing demons—will be executed by an artist named Doiku, whose praise is in the mouths of all the art critics—of Japan.

The following bath is recommended for rendering black dyed silk more lustrous and shining: Dissolve 2 lbs. soda crystals in 10 gallons of water. To this bath olive oil is added in sufficient quantity and until the oil begins to float on the bath. The addition of acids to this bath is not recommended, but if the silk has to be deprived of the whitish shine it acquires in the above bath, it can be washed in water to which citric, tartaric or ascorbic acid has been added.

At a recent meeting in Blackburn, Mr. Eli Heyworth, a large cotton manufacturer, stated his belief, "That in the year 1883, there would be such a revival of trade as there has not been for the last seven years." He added that "he was confident in predicting that the operatives will receive an advance in wages."

According to a St. Petersburg paper, a Joint Stock Company with a capital of 2,000,000 roubles, (say £200,000), is in course of formation to take over and extend the cotton-weaving mills in the provinces of Kostroma and Wladimir belonging at present to Messrs. G. and A. Gorbunow.

The third annual exhibition of tapestry paintings by lady amateurs and artists was opened last week at Messrs. Howell and James' Art Galleries, Regent Street, Pall Mall. Upwards of 100 specimens of this art adorn the walls of the gallery; and in nearly every instance there are indications of steady progress on the part of the competitors.

According to a Dutch paper the Amsterdam Exhibition promises to assume unexpectedly large proportions, and to prove of exceptional importance to commerce and industry. Amsterdam itself received the project rather coldly at first; now, however, not only that city but the whole of Holland has become enthusiastic on the subject. More than a thousand dutch firms are already registered on the list of exhibitors and will occupy 6,800 square metres of space, of which 4,800 will be in the principal building and the remainder in the machinery gallery. The number of Belgian exhibitors is even larger than the number of Dutch, 1,100 having been already enrolled, and allotted 9,000 square metres in the principal building and 2,000 square metres in the machine gallery. Germany, England, and Austria, will also be liberally represented.

A certain section of the House of Representatives at Washington intend to introduce an amendment to the Government Tariff and Tax Bills, to the effect that stock exchange and market operations of a speculative character shall be subject to taxation. It is proposed by the amendment that on all sales of cotton, grain, or other agricultural products, where the article sold is not to be delivered within ten days of the date of the sale, a tax of 2½ per cent. shall be paid both by the buyer and seller, and that a tax shall be levied upon all speculation in stocks, bonds, or other securities when they are sold in less than 12 months after their purchase. This latter tax is to vary from a quarter to 1 per cent. on the nominal value for less than twelve months to 2½ per cent. for less than 30 days.

It appears from the report of our Consul, Mr. Dickson, that Persian silk, which has furnished the poet with so many allusions, from Firdusi's national epic, the "Shah Nameh," down to Moore's "Lallah Rookh," is likely to become ere long little but a name. At one time it was the staple produce of the country—the article on which Persia almost entirely depended for paying for her imports; but the export is now not more than a fourth of what it was. This arises, we learn, from various causes. The silkworm disease, which destroyed crop after crop, forced the peasants to turn their attention to the cultivation of rice, and though the silk produce this year shows a marked improvement, the peasants are not disposed to revert to its culture on its former scale, as they have found from experience that rice suits them better.

NOTICE TO ADVERTISERS.

Advertisements will be inserted at the following rates; (in all cases prepaid): Twenty words, One Shilling; Sixpence for each additional Twelve words or part of Twelve. The address being counted as part of the Advertisement.

Displayed Advertisements according to arrangement.

Mills to Let.

TO LET or SELL, the very convenient MILL, known as Elmfield Mill, Bramley, near Leeds, with the counting-house, rag shed, 4 cottages, stable and other buildings, reservoirs, and land thereto adjoining, lately in the occupation of Messrs. Hoyle and Harrison. The mill is situate near the Bramley Railway Station, is 3 storeys high, well supplied with water, and adapted either for a woollen, cotton, or worsted mill, or for the leather or shoe trade. Immediate possession.—Apply to David Newton, Auctioneer, Paddock Lodge, Bramley; or to Henry Snowdon, Solicitor, 13, East Parade, Leeds.

CALLIS MILL, Hebden Bridge, Yorkshire.—TO BE LET (as a going concern), the above very Excellent and Extensive COTTON SPINNING MILL and WEAVING SHED, with or without machinery, viz.:—Amongst other things, about 10,000 mule spindles, 10,000 throstle spindles, and 500 looms, with steam-engine, water-wheel reservoir, and all necessary gearing and appliances complete, and in thorough working order; together with a commodious house, and also a manager's house in convenient proximity to the works. There are also numerous cottages, which will be let with the mill, which is remarkably well situated for road, canal, and railway accommodation, being situate on the Halifax and Todmorden turnpike road, contiguous to the Rochdale Canal, and within half a mile from the Eastwood Station, on the Lancashire and Yorkshire Railway, between Todmorden and Hebden Bridge.—For view, &c., application may be made at the mill; and further particulars obtained from Mr. Mallinson, Solicitor, 5, Norfolk Street, Manchester.

THE GAZETTE.

Adjudication of Bankruptcy.

Fox Henry, Saint Sepulchre Gate, Doncaster, silk mercer and draper.
Farrar Abraham, Vale Mills, Stansfield Road, Todmorden, Yorks, cotton manufacturer.
Kitching William and Frank Kirkby, Northumberland Street, Huddersfield, woollen and stuff merchants.

Liquidations by Arrangement or Composition.

Calder Donald, Seaforth House, Hoyle, Cheshire, and Brown's Buildings, Exchange Street, Liverpool, cotton broker.
Jackson William, trading as William Jackson and Sons, Park Place and Layerthorpe, York, fellmonger and wool merchant.
Keighley Fred and Charles Halliday Keighley, Thornton Road and Brook Street, both Bradford, stuff manufacturers.
Lightowler Joseph, trading as Joseph Lightowler and Co., Claremont, Halifax, carpet manufacturer, and Bath Parade Dye Works, Halifax, dyer.
Slater Raymond, Samuel Street, Camp Road, Leeds, woollen yarn spinner.
Ainley Samuel, Henry Hamer, and William Henry Townend, trading as Ainley and Co., Longwood, near Huddersfield, serge manufacturers.
Kitching William, Northumberland Street, Huddersfield, woollen and stuff merchant (separate creditors).
Marshall Arthur, trading as Arthur Maarschall and Co., Princess Street, Huddersfield, and Bridge Croft Mill, Milnsbridge, woollen manufacturer and spinner.
Whitaker Jonathan, Joseph Whitaker, and Frederick Whitaker, trading as Whitaker Brothers, Oxenhope, near Keighley, manufacturers.
Kirkby Frank, Northumberland Street, Huddersfield, woollen and stuff merchant.
Drake Joshua, Golcar, near Huddersfield, woollen cloth manufacturer.
Haigh John, Clough, Golcar, Huddersfield, Yorks, serge manufacturer.
Gilman James, Leek, Staffordshire, silk manufacturer.
Harrison John, Horton Lane, Bradford, wool warehouseman, hosier and draper.
Harrison Richard Frederick, trading as R. F. Harrison and Co., Gladstone Street, Leeds Road, and Swaine Street, both Bradford, stuff merchant.
Mills George Thomas, Joseph Harry Mills, and Annice Maria Mills, Windsor Mills, Pendleton, cotton doublers.
Roslington William, Whitehall Road and St. Paul's Street, both Leeds, and Berlin, woollen cloth and felt manufacturer.
Cockill John, jun., trading as John Cockill, Beaumont Street and Market Street, Huddersfield, woollen manufacturer.
Sutcliffe James, Chapman Street, Hulme, Manchester, underclothing manufacturer.
Beswick James, Warwick Street, late Hollingreave Shed, both Burnley, cotton manufacturer.
Hoyle Eli, Sowerby Bridge, manufacturer.
Officer Edmund, William Officer, and George Officer, Summit, Heywood, and William Greenwood, Blackburn, trading as E. Officer and Co., at Summit Mill, Heywood, cotton manufacturers.

Dividends.

Ormesher John, trading as John Ormesher and Co. (Liquidation), Piccadilly, Manchester, silk and cotton dress manufacturer. 1st and final dividend, 4d; E. O. Swallow, 7, Church Street, Manchester.
Crossley John (Liquidation), Halifax, dyer and finisher (separate estate). 1st and final dividend, 2s. 8½d.; J. P. Birtwhistle, Crossley Chambers, Northgate, Halifax.

Trustees Appointed.

Town Joseph, trading as James Hartley and Co. (Liquidation), Bradford, worsted spinner. Trustee, J. W. Tempest, Bradford, accountant.
Alexanders and Co., Weansland Mill, near Hawick, spinners and tweed manufacturers. Trustee, F. W. Carter, Edinburgh, accountant.
Fairweather William (Liquidation), Manchester, shirt manufacturer. Trustee, E. Guthrie, Brown Street, Manchester, accountant.

Dissolutions of Partnership.

Ainley, Shaw and Ainley, Parkwood Mills, Longwood, Huddersfield, worsted coating manufacturers.
Cliff and Williams, High Lane, near Stockport, cotton spinners. Debts by Charles Henry Cliff.
White and Taylor, Huddersfield, weavers on commission. Debts by William Taylor.
Taylor Thomas and Brother, Wigan, cotton spinners and manufacturers.
Megson Brothers, Ossett, Yorks, mungo manufacturers.
Bryan and Son, Heanor Gate, Heanor, Derbyshire, lace manufacturers.
Blackwood Brothers, also trading as the Burnside Carpet Company, Kilmarnock, carpet manufacturers.
Edmond Robert and Sons, South Bridge Street, Paisley, finishers. Debts by Robert H. Edmond, who continues the business.
Cliff and Jones, Deighton, near Huddersfield, woollen cord manufacturers.
Brown and Entwistle, Tonge-with-Haulgh, near Bolton, and Church Street, Manchester, counterpane manufacturers.

Dean and Hey, Honley, Huddersfield, woollen manufacturers. Debts by Charles Dean.
Smithies and Holroyd, trading as Richard Holroyd, Bank Bottom, Elland, Yorks, rag and waste pullers.
Taylor and Hanson, Halifax, dyers and sizers.
Morton, Cameron and Co., Newmilns, Ayrshire, lace, &c., manufacturers.
As regards James Clark and John Cameron.

Bills of Sale.

Kay F., Great Dover Street, Newington, lace goods manufacturer £72 0 0
Lancaster T., 53, George Street, Altrincham, dyer £30 0 0
Lines W. C., Kidderminster, carpet pattern designer £60 0 0
Hamilton G. M., 38, Church Street, Eccles, tailor, &c. £37 6 3 &c.
Hurst T., Market Street, Hyde, near Manchester, tailor, &c. £181 9 6 &c.
Farrar W. T., Higher Broughton, Manchester, yarn agent £76 6 0
Sharpley G., London Road, Macclesfield, silk manufacturer £100 0 0
Williams R., Ionian Terrace, Fallowfield, linen merchant £143 10 0 ab.
Nicholson B., Purwell, Batley, dyer, &c. £42 0 0 &c.
Hermann A., 12, Union Street, New Bond Street, tailor, &c. £250 0 0
Clarke J. H., and wife, Holyrood, Prestwich, cotton broker £150 10 4
Barlow S., New Road Dye Works, Radcliffe, dyer £621 6 5 &c.
Moore J. W., Nottingham, hosiery warehouseman £40 0 0
Mayall E., 10, Albion Street, Hanley, dyer £119 6 5
Hollinshead A., Sutton and Higher Huddersfield, silk manufacturer £1,535 11 0 &c.

PATENTS.

Specially compiled for "THE JOURNAL OF FABRICS AND TEXTILE INDUSTRIES" by G. G. M. HARDINGHAM, C.E., Fellow of the Institute of Patent Agents, 191, Fleet Street, London, E.C.

Applications for Letters Patent.

	No.
Billiard cloths. J. and G. E. Stead, Skinner Lane, Leeds	9th Dec. 5893
Combing machinery. F. Ambler, Bradford, Yorks.	6th Dec. 5818
Combing machinery. J. H. Whitehead, Leeds	13th Dec. 5958
Combing machinery. W. Terry and J. Scott, Dukinfield	22nd Dec. 6125
Dyeing wool, &c. T. Fox, junior, Wellington, Somersets.	5th Dec. 5801
Felt or felted fabrics. A. J. Boulton (T. Jegler and J. Offermann, Munich)	28th Dec. 6203
Finishing machines for textile fabrics. L. E. L. Condrais, Pimlico, S.W.	18th Dec. 6037
Glazing or burnishing fabrics. S. Wells, Canonbury, N.	29th Nov. 5674
Kier's for boiling fabrics, &c. J. Dimmock, Over Darwen	23rd Dec. 6135
Knitting machines. W. Cotton, Loughborough	20th Dec. 6088
Loom pickers. H. Tetlow, Miles Platting and J. Holding, junior, Lower Broughton	28th Nov. 5653
Looms. J. F. Brown, Glasgow	29th Nov. 5668
Looms. P. I. G. Moroy, La Vallée aux Bleds, France	29th Nov. 5691
Looms. A. Smith, Bingley, Yorks.	11th Dec. 5904
Looms. W. Adam, Kidderminster	11th Dec. 5916
Looms. J. Irving, Barnsley	13th Dec. 5964
Looms. D. Eastwood, Luddendenfoot, Yorks.	14th Dec. 5974
Looms. J. Laird, junior, Forfar	21st Dec. 6093
Looms. J. Pemberton and R. Pearson, Preston	23rd Dec. 6159
Looms. J. F. Brown, Glasgow	28th Dec. 6189
Mosaic fabrics. F. Walton, Heatham House, Twickenham, S.W.	18th Dec. 6039
Mules for spinning fibres, &c. T. Knowles, Blackburn	6th Dec. 3828
Oxidising textile fabrics, &c. C. D. Abel (G. Witz, Rouen)	11th Dec. 5914
Piled fabrics, ornamental shearing of. C. D. Abel (E. de Montagnac et Fils, Paris)	28th Nov. 5659
Preparing warps of fibrous materials. D. R. Malcolm and G. Malcolm, junior, Dundee	2nd Dec. 5953
Ring spinning and doubling frames. J. Young and E. Furniss, Mellor, Derbyshire	9th Dec. 5874
Separating hair from fibres. C. Harrison, 323, High Holborn, W.C.	20th Dec. 6081
Shearing pile fabrics, &c. C. D. Abel (A. Labrosse and G. Richard, Paris)	21st Dec. 6095
Shuttles. T. Brooks and T. Tweedale, Crawshawbooth, Lancashire	23rd Dec. 6139
Spinning machinery. F. Ripley, Bradford	14th Dec. 5973
Spinning machinery. E. Tweedale, Accrington	18th Dec. 6044
Spooling machines. T. Haud and J. T. Webberley, Blackburn	13th Dec. 5943
Textile materials, preparing wax, &c., for finishing. J. B. Hannay, Glasgow	9th Dec. 5875
Treatment of fibrous materials. W. C. Clennell, 6, Great James' Street, Bedford Row, W.C.	4th Dec. 5765
Treatment of fibrous materials. T. Routledge, Ford Works, Sunderland	19th Dec. 6061
Treatment of silk, &c. G. W. Von Nowrocki (W. Meister, New York)	7th Dec. 5839
Waterproof textile fabrics. W. R. Lake (D. M. Lamb, New York)	19th Dec. 6066
Wool washing and scouring. H. J. Haddan (E. Tremsal Loth, Belgium)	15th Dec. 5995
Yarn, separating from paper tubes or cops. H. J. Haddan (E. Scheidecker and R. Kohl, Thann, Germany)	12th Dec. 5919
Yarn winding frames, break apparatus for. B. M. Knox, Kilburnie, Ayrshire	30th Nov. 5706

Grants of Provisional Protection for Six Months.

3749	4916	5121	5157	5263	5401	5433	5451
5464	5471	5472	5475	5478	5439	5487	5507
5513	5529	5531	5578	5569	5589	5521	5603
5608	5620	5630	5653	5659	5668	5674	5703
5706	3753	5776	5801	5818	5828	5839	5840
5875	5883	5874	5904	5914	5943	5973	5995

(All of 1882)

Notices to Proceed.

(Notice of opposition to the Sealing of a Patent must be given within Twenty-one days of the Notice to Proceed being advertised in the Commissioners of Patents Journal.)

Bleaching.	J. A. Graham, 66, Coleman Street, E.C.	10th Nov. 5366
Bleaching.	J. Imray (F. C. Kudelski, La Vendée, France)	8th Aug. 3773
Chineeing textile fabrics.	W. A. Barlow (L. Godefroy and L. Lanselle, Paris)	17th Aug. 3939
Combing machinery.	G. Little, Oldham, T. C. Eastwood, Bradford, J. Green and J. Fletcher, Oldham	11th Aug. 3833
Disintegrating fabrics.	J. C. Watson, Leeds	16th Oct. 4918
Drying and treating textile fabrics.	W. M. Riddell, Finsbury Pavement, E.C.	11th Aug. 3830
Embroidering apparatus for sewing machines.	W. R. Lake (F. H. Chilton, New York)	1st Aug. 3657
Fabrics for covering walls, &c.	S. Fisher, Herne Hill, Surrey	16th Aug. 3921
Fibrous material, apparatus for breaking.	J. Shimm, Philadelphia	2nd Nov. 5232
Finishing textile fabrics.	W. W. Blackett, Leeds	27th July 3569
Knitting machinery.	S. Lowe and J. W. Lamb, Nottingham	12th Sept. 4340
Knitting machinery.	J. W. Lamb and E. Attenborough, Nottingham	12th Sept. 4341
Looms.	J. Hopkinson, Birstal, near Leeds	31st July, 3615
Looms.	P. J. G. Moroy, La Valéaux Bleds, France	29th Nov. 5691
Looms.	J. Dawson, Lawistone, Maine, U.S.A.	28th Aug. 4105
Looms.	C. Catlow, Burnley	17th Aug. 3948
Looms.	W. Adam, Kidderminster	11th Dec. 5916
Ornamental shearing of pile fabrics.	C. D. Abel (E. de Montagnac et Fils, Paris)	28th Nov. 5659
Painting woven fabrics, &c.	D. Guille (Père) South Molton Street, W.	5th Aug. 3744
Preparing cotton and other fibres.	W. Lord, Todmorden	23rd Aug. 4041
Reed fabrics for ceilings.	E. A. Brydges (P. Stauss and H. Ruff, Cottbus, Germany)	12th Aug. 3844
Ribbed piled fabrics.	J. R. Hutchinson, Bury	23rd Nov. 5569
Ring spinning and doubling machinery.	J. McGregor, Queen's Road, Manchester	17th Aug. 3934
Shuttle sewing machines.	J. E. Walsh (J. Kayser, Kaiser-lantern, Germany)	12th Aug. 3860
Spinning, doubling, &c.	J. B. Dewhurst, T. H. Dewhurst, and R. Cornthwaite, Skipton	16th Nov. 5464
Spinning, doubling, &c.	J. Young and E. Furniss, Mellor, Derbyshire	9th Dec. 5874
Surface coverings, manufacture of.	S. Hawksworth, Scarborough	17th Nov. 5472
Tappits for looms.	J. Bywater, Birstal, near Leeds	17th Aug. 3940
Textile materials, destroying solid impurities in.	O. Imray (La Société Harmel frères, Val des Bors, France)	21st Oct. 5009
Treating textile fabrics, &c.	E. A. de Pass (H. Anthoni, Paris)	14th Aug. 3875
Wool, cleaning.	W. P. Thompson (A. Frayssé, Antwerp)	2nd Aug. 3675
Wool, &c., screw gill boxes for preparing.	D. H. and W. Smith, Keighley.	16th Aug. 3916

Patents Sealed.

2672	2707	2743	2852	2880	2894	2928	2946
3088	3090	3494	3602	3968	4279	4332	4399
4515	4795	(All of 1882.)					

Patents on which the Stamp Duty of £50 has been paid.

John Hayes, of Oldham, "Improvements in the manufacture of emery rollers used for grinding cords."	28th Nov., 1879 4873
Jean Thomas Lemaire, of Hadimond Verviers, "A new or improved mechanical loader, with variable regulator and density for any filamentors and textile material."	4th Oct., 1879 4001

Arthur Paget, of Loughborough, "Improvements in self acting stop gear to textile machinery."	3rd Dec., 1879 4947
Thomas Henry Rushton and Benjamin Alfred Dobson, both of Bolton, "Improvements in machinery employed in preparing cotton and other fibres."	6th Dec., 1879 5012
Arthur Pollock, of Dillichip works, Dumbarton, "Improvements in apparatus for tramping washing, dyeing and otherwise treating yarns with liquids"	6th Dec., 1879 5000
Samuel Cunliffe Lister, of Manningham, "Improvements in machinery for combing, dressing or hackling silk and other fibrous material."	8th Dec., 1879 5019
Joseph Antony Dixon, of 175, West George Street, Glasgow, "Improvements in the manufacture of colouring matters suitable for dyeing and printing."	6th Dec., 1879 5003
John Duxbury, of Manchester, "Improvements in the method of and means for marking woven goods with trade marks and other marks or devices."	6th Dec., 1879 4998
J. Henry Johnson, of 47, Lincoln's Inn Fields, "Improvements in preparing colouring matters for dyeing and printing."	29th Dec., 1879 5305
William Cotton, of Loughborough, "Improvements in knitting machines."	20th Dec., 1879 5217
Edward Fairburn, of Obelisk Grove, Cooper Bridge, "Improvements in, or applicable to machinery for carding wool and other fibres."	17th Dec., 1879 5169
W. R. Lake, of London, "Improvement in machinery for cutting or splitting pile fabrics and for similar purposes."	17th Dec., 1879 5173
James Bottomley, of Buttershaw, "Improvements in the method of and apparatus for balling fibrous materials."	19th Dec., 1879 5200
Alphonso Keats, of Newcastle, in County of Staffordshire, "Improvements in sewing machines."	23rd Dec., 1879 5252

Patents on which the Stamp Duty of £100 has been paid

Thomas Singleton, of Over Darwen, "Improvements in looms for weaving."	13th Dec., 1875 4315
Rufus Yates and George Brierley, both of Preston, "Improvements in looms for weaving."	24th Dec., 1875 4488
Henry Wilde, of Manchester, "Improvements in the manufacture of metal rollers for printing calico and other textile fabrics, part of which is applicable to the refining of copper."	28th Dec., 1875 4515

Copyright of Designs.

(Registered during December, 1882.),

Class VI., Carpets.

390,637	John Crossley and Sons, Limited, Halifax
390,647	T. Briggs, Major Street, Manchester
390,659	Cooke, Sons and Co., London and Liversedge
390,715-17	The Heckmondwike Manufacturing Company, Limited, Heckmondwike
390,793-96	T. B. Worth, Severn Valley Mills, Stourport
391,041	Edwards, Cunliffe, Wilson and Co., 155A, St. Vincent Street, Glasgow
391,192	A. F. Stoddard and Co., Elderslie, N.B.
391,224	Storey Brothers, Lancaster
391,584-87	H. R. Willis and Co., Kidderminster
391,670	Harvey and Knight, 59, Broad Street, Bloomsbury, E.C.
391,738-39	T. B. Worth, Severn Valley Mills
391,761	C. Harrison, Stourport

Class XI., Furnitures.

390,580	Boden, Terras and Co., Manchester
390,581	D. Lee and Co., Fountain Street, Manchester
390,611-12	The Rossendale Printing Company, Manchester
390,707	T. Hoyle and Sons, Limited, Manchester
390,836-37	D. Lee and Co., Fountain Street, Manchester
390,941	D. Lee and Co., Fountain Street, Manchester
391,103	E. Beswick and Co., 88, Mosley Street, Manchester
391,212	W. Rumney and Co., 53, Portland Street, Manchester
391,294	R. Dalglish, Falconer and Co., Manchester and London
391,295	D. Lee and Co., Fountain Street, Manchester
391,435	J. L. Kennedy and Co., 47, Mosley Street, Manchester, and Hartshead Print Works, Salop
391,579	R. Duckworth and Sons, 16, Turner Street, Manchester
391,816	D. Lee and Co., Fountain Street, Manchester
391,834-35	D. Lee and Co., Fountain Street, Manchester

The Journal of Fabrics

AND

Textile Industries.

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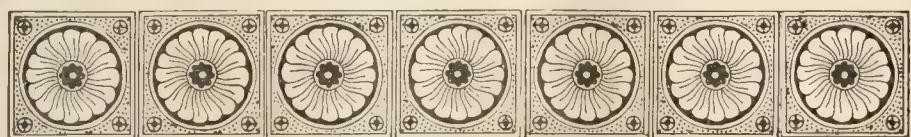
Notices.

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Technical Education.



THE annual soirée of the Bradford Chamber of Commerce was held last month, when Mr. Swire Smith, one of the Royal Commissioners on Technical Education, took the opportunity of expressing his views on the subject as applied to the United Kingdom. He said that wherever the Royal Commission on Technical Education, of which he was a member, had gone, and wherever they had found that the competition was serious, they had found the greatest desire on the part of all engaged in industries to give the highest possible attractiveness to everything they had to make. When they had the complaint that Bradford goods were placed in competition with the productions of other countries, they must realise what were the difficulties which Bradford had to encounter. How had the decline of trade been met? There were no natural reasons—and he wished Mr. Lister had been present to

give a more perfect opinion on this point—why the great silk trade should have been almost monopolised by the Continent—except such reasons as were to be found in the greater care in the manipulation of material and the more beautiful designs placed upon it, and the more excellent manner in which dyeing and finishing were carried out. Well, Bradford had shown no lack of enterprise in the silk industry; and the most remarkable

sights in the recent exhibition, so far as textiles were concerned, were the exhibits of silk goods from Manningham Mills. They might see in those mills what could be done by one man of genius, enterprise, and capital. In Bradford in recent years there had been no better illustration of difficulties overcome, of a new industry planted in a district, and of the enormous development it had reached, than they saw in Manningham Mills. Foreign competitors had sometimes followed and sometimes surpassed Mr. Lister, and it required a greater expenditure of capital and enterprise to surpass them. But what did their foreign competitors look to for being able to keep their position? They were constantly seeking for the excellence which Mr. Mitchell had mentioned—not only in silk, but in everything else; for the million were, more and more, requiring objects of beauty to look upon, and because fashions were more likely to be led in the future by the intelligent and refined rather than by the ignorant and vulgar. Their competitors kept themselves well informed as to what was being done in other towns; and Englishmen should take pains to know what was being done on the Continent. Their foreign competitors did not look for progress to low wages and long hours, but were aiming to attain greater skill and taste. Their machinery was of the best; and during his recent visit to the Continent he had seen Bradford and Keighley looms used for weaving patterns that had never been thought of in this country. They attached great importance to museums of textile fabrics, in which they had examples of every material and all the best things that could be met with; and it was to these that they owed their inspiration and very much of their advantage. In 1880 we imported 13 millions sterling of silk goods. This was a matter of vast importance, especially to the students of the Technical School. What an enormous amount of employment it would give if that trade could be imported to England. We imported 13 millions of silk goods in 1880, and in 1881 we imported 11½ millions. Look at the other side of the picture. In 1880 we exported to the value of two millions, and in 1881 two and a half millions. Thus we had a decrease of one and a half millions in imports, and an increase of half a million in exports. He thought this was a matter of congratulation to them, and that there was no town in the country that might be more fully congratulated than Bradford on the influence of Manningham Mills. As to all-wool goods, there was a more serious competition in these than in silk goods. Bradford some years ago was a very extensive maker of all-wool goods, but the industry was given up because they had something more profitable, and for thirty years, till a few years ago, the mixed fabrics of Bradford had brought them such prosperity as not to leave much cause for complaint. During recent years the French had had a monopoly of the all-wool industry; but Bradford had taken it up again. Did they see the recent display of all-wool goods in the exhibition? Those goods were entirely of Bradford make, and afforded evidence—not only on the authority of Bradford merchants and manufacturers, but of others—that great progress had been made in the manufacture of all wool goods, in which they might now be said to be surpassing the productions of France. Now, what did this lead to? In 1880 we imported woollen and worsted goods to the amount of £7,650,000; in 1881 those imports had fallen to £5,980,000. He took it that the reason of the falling off was more because of the tariff than of the lack of enterprise in making these goods in Bradford. Even while the exports in 1881 were not lower than in 1880, they were £7,200,000, which gave at any rate, this presumption, that if they were not competing as they ought to compete with rivals outside, they were making progress in the manufacture of those goods to be worn by the people in this country. And there was this consolation for the fighters in this great battle, that those who had most sturdily set themselves to face the long hours and all the other advantages of the French, those who had been most direct in meeting the French in every particular, were those who during the long depression had suffered least of any of the manufacturers of Bradford. But France was not easily to be beaten. They knew that after the great war of 1870, when, almost humbled to the dust, it seemed to set itself to the task of restoring its fair fame in the eyes of the world; and in no sense did it do this more than in its determination to make great efforts in manufacturing industry,

and probably in no other country had there been such great strides in every department during the past ten years. Therefore they must conclude that France was not a rival to laugh at. At Rheims they found the greatest determination and energy displayed, and most of this was being put into the Technical School. He need not describe that school to them, because it had been well done by the delegates who were sent out by Mr. Mitchell. The Rheims Technical School had cost £20,000, and an annual grant of £2,400 was made from the municipal rates towards the school. All the classes were free, and so great was the desire that no talented boy should escape, that they positively offered bursaries in which food and clothing were given. Before they visited Roubaix there had been a commission appointed to consider how its trade could be improved, and this commission had recommended that a new school should be built at a cost of £60,000, of which sum £24,000 was to be supplied from the rates of the town, and £36,000 was to be granted by the Government. They held the doctrine there that whatever benefited the trade of the town benefited the town, and whatever benefited the town to a certain extent benefited the country. At Roubaix there were from 600 to 700 students attending the evening classes of various kinds, which were all free. In these places manufacturers relied upon the superior design, the dyeing, and the exquisite beauty of their productions; and what had struck him during his wanderings on the Continent was that the manufacturers were not content with the perfection to which they had attained, but were still aiming at greater perfection. In Bradford let them look round and see to what extent high artistic talent was put into their goods. He was not speaking of the talent which copied a design from silk and which reproduced it in wool, but rather of the talent of a high order, which originated real pictures which impressed the buyer by their good taste or their style of novelty. He would be told that wool followed silk, and he would say, why not let wool strike out a new line of its own? A hundred difficulties might be put in the way, but difficulties were put in the way that they might be overcome, and if it paid to employ high talent in the production of silk goods, why should it not pay to employ high talent in the production of woollen goods. He could not but look upon it as a happy augury that they were assembled in a building which had been erected and almost endowed for the promotion of this great work. He found that the influence of the School of Art at Nottingham upon the lace trade had been so great that they were almost able to dispense with the artistic designs bought from France and other countries, and so they would find, if they put their shoulders to the wheel in Bradford, that they would have success quite equal in proportion to the efforts which were made. It was by such means that the Bradford trade in the future would be improved, and in proportion as they developed the intellects and the faculties of their people, just in proportion would they enjoy new life and prosperity, and bring about great advantage to the whole community.

Cotton.

(Continued from Page 2.)

It seems impossible to fix the exact date of the introduction of the cotton manufacture into England. But, according to Sir Edward Baines, the art was brought from Flanders by the Protestant refugees, who fled from Antwerp and other cities of the Spanish Netherlands, when the Duke of Parma, in 1585, captured and ruined the former important trading city. He says: "Great numbers of the victims of a sanguinary persecution took refuge in England, and some of them settled in Manchester; and there is the stronger reason to suppose that the manufacture of cotton would be commenced here, as there were restrictions and burdens on foreigners settling in business as masters in England in the trades then carried on in this country, whilst foreigners commencing a new art would be exempt from those restrictions." The earliest authentic record on the subject is a work published in 1641, by Lewis Roberts, entitled "The Treasure of Traffic," from which we may infer that the manufacture of this fabric had become established in and about Manchester in 1641, and that the goods were supplied to foreign

markets, as well as to various parts of our own country. He says: "The town of Manchester buys linen yarn from the Irish in great quantity, and, weaving it, returns the same again in linen into Ireland to sell. Neither does her industry rest here; for they buy cotton wool in London that comes from Cyprus and Smyrna, and work the same into fustians, vermillions, dimities, and other stuffs, which they return to London, where they are sold, and from thence, not seldom, are sent into foreign parts, where the raw material may be more easily had for the manufacture." At this period, and for a long time afterwards, each weaver provided his own warp, which was of linen, and his own weft, purchasing them wherever he was able. But so much time was lost in this way (for a weaver had often to walk five or six miles in a morning and call on several spinners before he could obtain weft sufficient to serve him for the rest of the day), that the Manchester buyers established agents in various villages for selling these things. The yarn for the warp was bought ready prepared from Scotland, Ireland, or Germany. The women carded and spun the weft, and father and sons wove the cloth. Still, in spite of the arrangements made by buyers, weavers experienced much difficulty in obtaining weft, and the prices paid for it were sometimes so high as to take away all or most of the profits of weaving. By the use of the one-thread wheel, the only spinning machine then known, the most industrious person could not produce more than one pound of thread per day, and the quantity prepared in England did not exceed that yielded by 50,000 spindles of our modern machinery. According to Dr. Taylor's hand-book on "Cotton Manufacture," this scarcity of weft led, in the first place, to the adoption of the system of infant labour. But this same deficiency induced men to turn their attention to the invention of machinery in order that the supply of weft might equal the demand. In the year 1750 the fly-shuttle had been invented by Kaye of Bury, and in 1760 improvements were commenced in the process of carding. James Hargreaves, an industrious, but uneducated man, a weaver of Standhill, near Church, Lancashire, adapted the stock cards used in the manufacture of woollen to the carding of cotton, and also greatly improved them. By this contrivance a person could do twice the amount of work, and with more ease than by hand-carding. This invention was succeeded by the carding engine. It is not known to whom we are indebted for this machine, but the father of the late Sir Robert Peel was one of the first who used it, and he, assisted by Hargreaves, set up a carding engine with cylinders at Blackburn as early as 1762, this machine was not adapted for separating the cotton from the cards—that was done by women. There had been many unsuccessful attempts to improve the method of spinning before 1767, when James Hargreaves invented the spinning-jenny. The idea was suggested to him by seeing a spinning-wheel, which had been accidentally overturned, continue its revolutions as it lay on the ground. He had before tried to spin with two or three spindles attached to ordinary wheels, holding the several threads between the fingers of his left hand, but the position of the spindles rendered the attempt ineffectual. It now occurred to him that if the spindles were placed perpendicularly, several threads might be spun at once. He therefore made a jenny of eight spindles, turned by hand from a horizontal wheel. In it the eight rovings were passed between two flat boards laid horizontally across the machine; and these being grasped in the spinner's hand and drawn out by him, formed the rovings into threads. This machine was afterwards so greatly improved that it worked eighty spindles. Hargreaves, well pleased with his invention, would have been satisfied to have kept the affair a secret, and to have supplied, only, his own loom with weft, but a member of his family boasted, to a friend, of the rapidity with which she could spin a pound of yarn. The story was made public and so aroused the envy and ill will of the villagers that a mob broke into his house, destroyed the machine and his furniture by fire, and threatened violence to himself. He left his native place and removed to Nottingham, where, assisted by Mr. Thomas Jones, a joiner by trade, he built a small spinning mill on the jenny plan, there he spun yarn for Nottingham hosiers. In 1770 he patented his invention, which by this time was beginning to be known and appreciated by manufacturers, and soon came to be

extensively pirated in Lancashire. He brought actions against them for damages, when a deputation waited on him and offered him £3000 for liberty to use his "jenny," but being ill-advised he asked a larger sum, the demand was refused and the suits proceeded, but before the trial came on it was proved that the inventor had, in his poverty, before the date of the patent, mounted and sold some of the machines. The attorney, therefore, gave up the case and Hargreaves got no recompense for an invention which was an inestimable benefit to the nation. He died in 1778, leaving his family about £500. His youngest, and only surviving daughter, received, after her father's death, £250 from the Royal Bounty Fund, through the hands of Sir Robert Peel. The "spinning-jenny" continued to be used until the invention of the "mule-jenny," by which it was superseded.

(To be Continued).

The Law of Partnership.

The fifth of the course of lectures on Commercial Law which are being given in Manchester, by Mr. T. F. Byrne was on the Law of Partnerships. Mr. Byrne said that at common law, partnership was a contract between two or more persons, by which they agreed to employ their capital, labour, and skill in trade or business with a view to a community of profit and loss between them, and participation in profit, though not in all cases conclusive of the existence of partnership, might be taken as the chief test by which such a contract was recognized. Participation in loss was not the criterion, for one partner might agree with others to be free from loss, and such stipulation would hold good as between himself and the others: but it would not affect his liability to strangers. Profit was the excess of gross returns over outlay, and partnership, therefore, was not the same as joint ownership. Nor was it partnership where there was a sharing of gross returns. At common law there was no limit as to the number of parties, but the Companies Act, 1862, provided that, with the exception of companies and partnerships formed under Act of Parliament or letters patent, or engaged in working mines within the jurisdiction of the Stannaries, every banking company consisting of more than ten persons, and every other company or partnership consisting of more than twenty persons established since November 1, 1882, must be registered under it. When persons had entered into partnership and had completed the contract they were collectively called a firm, and must trade under whatever firm name they adopted. The only restriction on the choice of a name was that it must not be one, or closely like one, already appropriated by some firm or company carrying on a like business. Every act done by a partner in the course of the business of the firm, in the name and on behalf of the firm, was binding on all the partners. This resulted from the relation of the parties, each partner being not only a principal, but also an agent, and his co-partners in carrying on the trade. It was possible for a man, without entering into any contract, to impose on himself the liabilities of a partner with regard to third persons by lending his name and credit to the firm, and, as the phrase went, "holding himself out" to the world as a partner therein. In this way, one who had retired from a firm might be liable for debts of the firm contracted after his retirement, if he had omitted to give sufficient notice to the creditors of his retirement. To constitute this "holding out," however, there must be a real lending of the person's credit to the firm, and the doctrine of "holding out" did not extend to bind the estate of a deceased partner, where after his death the business was carried on in the old name. An ordinary partner did not by his retirement cease to be liable for debts contracted whilst he was a member. The only way in which a retiring partner could be discharged from liability for previous debt was an agreement to that effect between the creditors and the members of the new firm, and an incoming partner was not liable for debts contracted before he joined the firm, unless he entered into such an agreement. Each partner had authority to do all acts that fell within the ordinary scope of the business of the firm, and any act so done would bind his copartners in the same manner as if he had been their agent appointed for the purpose. What acts were necessary to the transaction of the business of the firm was no question depending on the nature of the business and the practice of persons concerned in it, but there was a certain number of trading transactions extending by usage to all trading partnerships. A partner could not bind a firm by deed without express authority, neither could he bind the firm by giving a guarantee unless there had been an agreement or usage to that effect in the firm or other firms in a like business. Nor could he bind the firm by submission to arbitration. If a partner in the course of business transactions for the firm did a wrongful act by which a third person suffered, the firm was liable to the same extent as the partner committing the act, and if one partner misappropriated the money or property of a third person received by him within his authority, each member of the firm was liable. As regards the rights of partners amongst themselves, in the absence of any agreement to the contrary, they were taken as equally interested in the partnership stock and effects, but the actual share of any partner would depend upon the state of accounts, for he might, for example, have borrowed and be indebted to the firm and entitled to no valuable interest at all. And a person to whom the partner was individually indebted would be entitled to seize only that which he was justly entitled to as between himself and his companions. Partners must observe most scrupulous fidelity to each other; one was not allowed to stipulate for any private advantage at the expense of the rest. A violent breach of faith justified dissolution, but the law resorted to that remedy reluctantly. All the arrangements provided for in the contract of partnership must be followed, or varied by general consent; but where any of them had been regularly and to the knowledge of all disregarded,

the court would consider them dispensed with. As to dissolution, if no time was fixed upon and there were no circumstances from which a fixed period could be inferred that the partnership might be terminated at the will of the parties to it. Partnership was also dissolved by the bankruptcy or attainder or death of a partner. When the above circumstances happened the entire firm was dissolved, no matter how many members belonged to it, unless the contrary had been expressly provided for by the articles of partnership. Mr. Byrne subsequently spoke of the different classes into which debts were divided, viz., record, speciality, and simple contract debts, referred to the alienation of debts, and touched upon the subject of the statutes of limitations.

Application of Alizarine in Calico Printing and Dyeing.

(Continued from Page 3.)



RECENTLY a pretty style has come out which meets with great demand, containing dyed alizarine red, steam alizarine rose, and aniline black. The pattern is only engraved for two colours, rose and black. The entire pieces are mordanted, and then printed with discharge and aniline black. They are then aged and duned, whereby the mordant is removed from the discharge which has been applied, leaving them white. They are then dyed with about 24 ozs. 20 per cent. alizarine per piece, washed and dried. The pieces are now red on both sides, with a design in black and white. After preparing in aniline oil, a steam rose is padded over the whole and steamed. The rose is then found attached to the white parts, while it is easily removed from the reds and the blacks by washing and soaping.

We turn now to the mordants which give other colours with alizarine. With black liquor (acetate of iron) it gives violets down to lilac. According to the shade intended we use either the commercial pyrolignite of iron at 20° Tw., or product of the double decomposition of copperas and sugar of lead, or a solution of precipitated oxide of iron (a mixture of peroxide and protoxide) in acetic acid at 10° Tw.

If it is needful with steam alizarine reds to take care that the mixed colours do not get too old, this is doubly the case with steam alizarine violets. Not more colour must be mixed than can be used at once, as violets soon get pale. Great attention must also be given to the soaping and chloing, as these operations easily attack the violet too much.

Alizarine Violet B.

Alizarine blue tone, 20 per cent.	1,200	parts
Water	1,200	"
Acetic acid, 8° Tw.	800	"
Acetate of lime, 22° Tw.	600	"
Black liquor, 15½° Tw.	1,000	"
Thickening	5,600	"

This violet, according to the shade required, is either printed on full strength, or let down 1 part colour to 1, 2, or 3 parts thickening (consisting of wheat starch, with very little calcined starch).

Violets of this kind are not very bright, and are generally printed along with aniline black. If a fine, fiery violet is required, add to the colour 1 to 5 parts per 1,000 of methyl-violet, along with a little glycerine-arsenic, according to the tone to be produced, and according as the pieces are to be more or less severely dealt with in washing and soaping.

Alizarine violets come up finest on cloth not prepared with oil. After printing steam for 1 hour, pass for 1 minute through a chalk bath at 1 and 5° Fahr., wash, soap, wash again, and chlore very slightly.

Lilac.

Violets produced by dyeing have always a brighter appearance than such as are printed. Along with lilac black is generally applied either an aniline black or a black got up with logwood and iron.

Lilac 7.

Calcined starch paste (dark)	6,125	parts
Acetic acid, 5½° Tw.	372	"
Black liquor, 14° Tw.	387	"
Calcined starch paste (light)	1,634	"

When these ingredients are incorporated, add

Quick lime	39 parts
Arsenious acid	279 „
Bluestone	243 „
Water	921 „

Black 8.

Black liquor, 14° Tw.	2,766 parts
Extract of logwood, 14° Tw.	2,766 „
Water	646 „
Ascectic acid, 8° Tw.	1,344 „
Calcined starch	2,904 „

Boil and make up to 10,000 parts

The colours are printed on cloth not oiled, and the pieces, are then either aged for twelve to twenty four hours in moist heat, or taken through an aniline-fixing apparatus. They are then dunged with cow-dung, chalk and arseniate of soda, at 148° to 185° Fahr., washed and dyed, using per piece about 2½ ozs. of a 20 per cent. aniline blue shade, and adding the solution of about ¼ oz. methyl violet. The dyeing takes one hour, the heat being gradually raised from 68° to 185° Fahr. Thorough washing afterward is necessary to get good whites. After drying, the pieces are slightly chlored in the steam chloring apparatus and finished. As sometimes different lilac patterns are required where certain portions are to remain white, a colour with citric acid is used as a resist. The following three colours are then printed on; Resist C., lilac 7, black 8, and are then covered with lilac 7. In the parts where the lilac comes upon the resist the design remains white as the citrate of iron is removed on dunging.

Browns in Dyeing.

For dyeing cottons brown alizarine does not play so important a part as for red and violet, as these shades can be produced more cheaply with the woods. They are generally dyed with red woods, logwood, bark, grenade, garacine and sumac.

For plain alizarine browns the following method may be taken:—The pieces, clean and bleached, are passed on the padding machine (spread out and, if possible, without folds, which are apt to render the colour striped) through.

Black liquor, 20° Tw.	2,500 parts
Red liquor, 20° Tw.	25,000 „
Glycerine, 45° Tw.	550 „

the whole mixture being set at 8° Tw., by adding water. Take the pieces twice through, but dry only after the second time. Nip between rollers, one of india-rubber and the other of brass, and dry with a frame or hot flue. Take the pieces through the apparatus for fixing anilines, and let them lie for a day folded up. Pass them, spread out, through cow-dung and chalk. Wash and dye with 24 oz. alizarine blue tone (20 per cent.) per piece, raising the heat in one hour to 154° Fahr., and keeping it at this point for a quarter of an hour. After washing, the pieces may either be allowed to retain their light reddish-brown tone, or darker shades, may be got by padding either in a solution of magenta, ¼ oz. per 35 fluid ozs. of liquid, or in methyl violet, 80 grains per 35 fluid ozs. In either case the pieces are washed in warm water without previous drying, dried, and finished with weak gum water.—*Leipziger Faerber und Zeugdrucker Zeitung.*

Injurious Action of Copper in Turkey Red Dyeing.

In mordanting cotton for Turkey red dyeing, it is often found that the yarn becomes brittle in some places, while the contiguous portions remain uninfused. Dr. Schaal has investigated this matter, and found that this destructive action is due to the presence of copper in the oil used in mordanting. The yarn examined by the author was first boiled for several hours with a solution of soda or soluble glass, thoroughly dried, and then placed in a bath of the following composition: Tournant oil (rancid olive oil, containing free fatty acid), solution of potash and sheep's dung. It was several times passed through this mordant, and then dried. After this operation the yarn showed the injured portions, which generally had a light brown colour, and appeared as if they were singed. This effect could not be

due to the potash solution, for, if that were the case, it would have to extend through the whole of the yarn. On incinerating some of the damaged yarn, the ash was found to contain traces of copper, to which was ascribed the injurious action. This was shown to be really the case by using an oil to which copper had been intentionally added. This oil made the yarn brittle, while oil perfectly free from copper had no injurious effects. It was afterward found that the vessel in which the oil was kept, was provided with a brass cock, and that the oil was pumped through a brass pump, which had both been corroded. After replacing these copper apparatuses by iron, the evil was completely removed.

*Easy Methods of Detecting Dyes Fixed in Yarns and Fabrics.**

By J. JEFFRE.



To decide how some particular article, of which we have a pattern, has been dyed is a problem with which we are not unfrequently confronted in the warehouse as well as in the laboratory. Much interesting information on the subject has been put on record by different writers; but since then many new dyes have come into common use, and the information is, consequently, more or less incomplete. More recent writers who have taken up the subject have considered dyes in a concrete form or in a state of solution, rather than as we most often meet with them, *fixed* in some tissue.

In my investigations I have depended chiefly on earlier writings and upon the researches of M. Baranoff published in 1874. Whilst endeavouring to make my remarks as comprehensive as possible, I have excluded certain dyes which are not in industrial use and have merely a theoretical interest. On the other hand, I have included a few old fashioned dye-stuffs now out of date, as these serve to illustrate progressive changes in the tinctorial art. I have also given the reactions of composite colours. Without attempting to follow in detail all the possible combinations within the dyer's reach, I have chosen certain types of dyes in common use to show the method of determining their colour combinations. I have employed the simplest reagents, which may be said to be at everyone's command. These are: (1) a solution of caustic potash, formed by dissolving one part of the potash in ten of water; (2) hydrochloric acid diluted with its own volume of water or, in some cases, employed in concentrated form; (3) nitric acid; (4) ammonia; (5) green vitriol (sulphate of iron); (6) tin salts in concentrated solution.

The method I find most convenient is to immerse a small cutting of the article in the reagent, in a porcelain capsule. By drawing the piece out and laying it over the rim of the capsule, we are enabled to detect the changes in shade produced and to estimate them with accuracy. It is a good plan at the same time to subject to similar test a cutting of some material known to be dyed with the dye supposed to have been used for the material under examination. We thus get comparative results which may facilitate our inquiry. Likewise, samples of the fibre under consideration—wool, silk, cotton, as the case may be—of the same exact shades should be compared, as sometimes the results are affected to a certain extent by the amount of dye in the fabric. Subject to this treatment, the leading colours arrange themselves as follows:—

1. **REDS.**—Red dyes may be classified in four groups: (1) those which turn purple or blue; (2) those which turn brown; (3) those which become lighter, turning to a brownish or yellow hue; (4) those which undergo no change, or at most an insignificant one.

No 1 group comprises madder, cochineal, alkanet, and murexide.

Madders turn orange under the action of hydrochloric acid; the other dyes above named are not perceptibly altered by it. With caustic potash, cochineal turns a purple-red; orchil, a purplish blue; alkanet, a true blue. Lac dye gives the same reactions as cochineal, both having the same base, coccinic acid. But lac dye shades have much less brilliancy than cochineal. By the depth of shade, too, may be distinguished the reds

produced with ammoniacal cochineal or cochineal carmine. A reaction characteristic of madders is that when the red has turned yellow under the action of hydrochloric acid it can be further changed to purple by washing with lime-water. Immersed in a bath of boiling soap, the material resumes the original red, but of a paler shade. With ordinary madder-dyed goods the soap-bath turns the purple to pink. Artificial alizarine and the various madder derivatives can be recognised by the same reactions. Turkey or Adrianople red is recognised by its insensibility to the acid test. Garancine and garanceux (flowers of garance), when washed in lime-water after immersion in the acid turn a dull blue instead of purple.

It is to be remarked that when madder dyes turn a reddish purple under the action of potash they sometimes exhibit a brownish cast, which might lead to their confusion with those of Group No. 4, *i.e.*, rosolic acid, coralline, eosine, and coccine. But none of the latter give the characteristic reactions with lime-water and soap. Washed in lime-water, rosolic acid, coralline, eosine, and coccine they recover their fine red, or orange hues; madders, as before stated, turn purple. Murexide under action of potash turns grey in the case of light shades, and purplish in deeper ones. In this respect it might be confounded with orchil. But hydrochloric acid takes the colour out of murexide, whilst orchil is unchanged by it. Protochloride of tin turns murexide a greenish hue. A peculiar feature in this dye is the presence of mercurial salts, which act as a mordant and fix the colour in the material, and which can be detected by any of the ordinary chemical tests for mercury.

No. 2 group is represented by sanders wood. By boiling in green vitriol it is changed to purplish brown; by boiling in bichromate of potash it changes to brownish yellow.

No. 3 group comprises safflower, fuchsine, and murexide in light shades. Under a sufficiently prolonged treatment with caustic potash Brazil wood comes within the same category. Safflower turns yellow under the action of potash, and the original shade is not brought back by washing with water. Hydrochloric acid turns safflower yellow. Citric acid has no effect on it. Fuchsine is readily recognised by a characteristic reaction. Potash removes the colour altogether; but prolonged washing in water brings it back again. This peculiar reaction is common to several aniline dyes. These, in point of fact, are salts of rosaniline or salts of rosaniline in which one or more equivalents of hydrogen have been replaced by organic radicals. The bases are colourless, but form magnificently-coloured salts. The potash breaks up such compounds, and so destroys the colour. Repeated washing, in turn, removes the potash, and so allows the salt to reform, the colour re-appearing therewith. These discolourings and recolourings are well defined in all deep shades. In very light shades they are less easy to note, as in every case there is a certain loss of colour, and the recoloured tissues may not always take a shade deep enough to be readily recognisable. With tin salts fuchsine dyes turn purple. Hydrochloric acid turns them a brownish yellow (afterwards greenish?). Water brings back the reddish purple shade.

No. 4 group comprises saffranine, azo-dinaphtyldiamine (or the colour produced by consecutive action of hydrochlorate of naphthylamine and nitrate of potash), rosolic acid, coralline, pure eosine, eosine shaded with plombic salts, coccine, ponceau, and Brazil wood.

Saffranine is distinguished by the action of hydrochloric acid, which turns it a fine blue. Washing with water brings back the original colour. Azo-dinaphthylamine is known by its peculiar orange shade, and by hydrochloric acid turning it to a dirty bluish purple.

Rosolic acid and coralline turn an orange-yellow under the action of hydrochloric acid. Eosine does the same. But the two former are distinguished by their tones, which incline more to orange-yellow. Potash turns rosolic acid and coralline bright red. On eosine it has no effect.

If the action of the potash is prolonged on woollen materials dyed with eosine, the colour turns black, owing to decomposition of the wool, the sulphur in which forms a salt of lead.

Coccine turns a light citron-yellow under the action of hydrochloric acid. Washing in water restores the colour. It gives the same reactions as eosine, but the shade is not quite so orange.

Artificial ponceau undergoes no change under the action of potash or of hydrochloric acid. It resists both.

Brazil wood inclines to a current-red under the action of hydrochloric acid, particularly when the latter is concentrated; but the reaction is not very well defined, and might lead to the confusion of Brazil wood and artificial ponceau. But the shades of the latter are so much more brilliant than Brazil wood colours as to leave no room for doubt between them. Under prolonged action of caustic potash Brazil wood dyed materials lose their colour, and washing but bleaches them more.

Rocelline gives most of the reactions of artificial ponceau; but prolonged immersion in a solution of tin salts removes the colour altogether, which does not happen with artificial ponceau.

(To be continued.)

* Essay awarded a *Silver Medal* by the Industrial Society of Amiens.

To Determine the Components of Mixed Tissues.

To ascertain the component fibres of tissues is a problem which has lately been largely discussed, owing to the introduction of cotton yarns in the formation of certain fabrics. The following analysis were recently submitted to the Society of Industrial Arts of Lyons, by M. Henri Danzer, who says:—"It is well known that textile materials are classified in two divisions. (1.)—Vegetable Textiles. (2.)—Animal Textiles."

This distinction of origin enables us to detect in any tissue the pure vegetable or pure animal fibres, or if the two be mixed. To this end nothing more need be done than to ravel any number of threads of the tissue and burn them in any flame. Threads of animal origin, such as wool, goat-hair, alpaca, silk, etc., form a spongy, swelling coal, which makes combustion difficult, leaving relatively, an abundance of ashes. Vegetable fibres, such as cotton, flax, hemp, &c., on the contrary, burn with a bright flame without appreciable residuum and almost without smell. Another method consists of boiling for some time a mere fragment of tissue to be examined in nitric acid (*aqua fortis*). Under the influence of the acid, silk will be coloured a light yellow, wool a dark yellow, while cotton, flax, hemp, &c., remain white, which can be ascertained in one moment. This experiment will determine the nature of the tissue. If it is desirable to know the proportions of the different component fibers. Mr. Danzer recommends the following analysis:—"A piece of the tissue must be carefully washed with soap, to destroy all greasy particles. After a thorough washing the material must be dried. A sample of five grammes will be sufficient for a complete trial. It is to be placed in a bath of caustic soda, and boiled until the substances are completely dissolved. The contents of the bath must then be poured upon a filter. The ley will quickly pass through, while the dissolved fibers will remain upon the filter. A thorough washing in an abundant supply of clear water will purify them from the soda. When dried, the loss of weight will determine the amount of animal matter. This method is very positive, and after many trials is preferred on account of its great simplicity."

Calcutta International Exhibition, 1883.

An International Exhibition will be opened at Calcutta, on the 4th December next, under the patronage of his Excellency the Viceroy and Governor-General of India, and his Honour the Lieutenant-Governor of Bengal. There will be nine principal sections:—1, fine arts; 2, apparatus and application of the liberal arts; 3, furniture, and objects for the use of dwellings; 4, clothing, including fabrics and objects of personal wear; 5, products of mining industry, forestry, &c.; 6, apparatus and processes used in the common arts; 7, food, fresh, preserved, or in various states of preservation; 8, artizan's workmanship; 9, children's work. Certificates of gold, silver and bronze medals will be awarded by special juries of experts. All goods forwarded for exhibition and addressed to the Secretary for that purpose are admitted free of duty. Application for space, with full particulars of the intended exhibit, must be made at the office of the official Agent for Great Britain, Mr. W. P. Dilworth, 4, Westminster Chambers, Victoria Street, London.



ORIGINAL DESIGNS.

On our first plate, we present to the notice of our readers an excellent double page design for a Damask. It will also be found of service for many other kinds of fabrics. It is from the pencil of Mr. H. Spittle, 3, Grafton Street, Ardwick, Manchester.

* * * *

On our second plate, we show a design for a Tapestry Fabric—adapted for the covering of furniture. The colouring of this design should be:—ground—Black; leaves—a Medium Olive Green with touches of Gold; the flowers in Pale Blue and Gold; and the berries in Indian Red. This simple design, which has been drawn by Mr. R. Lord, 3, Gerrard Street, Halifax, is suitable for many other purposes and would look well as the body of a Table-Cover, or as an Embossed Velvet.

* * * *

* * We beg to inform manufacturers and others that adaptations of designs, published in the "Journal of Fabrics and Textile Industries," can be made at the Office by experienced Designers, and that Original Designs can also be furnished at moderate charges.

The Journal of Fabrics and Textile Industries Design Book.

We beg to inform Manufacturers and Designers of all classes of Textile Fabrics that we can now furnish the Designs, which have been issued in the back numbers of this Journal, bound in a neat cover. We have had 500 sets of these reprinted, for a part of which orders have been already taken. The Designs are specially adapted for Carpets, Tapestries, Table-covers, Damasks, Cretonnes, Muslins, Laces, Embossed Velvets, Linens, Quilts, Toilet-covers, Calico Prints, Silks, Stuffs, Felts, Curtains, Figured Braids, and a variety of other fabrics. We shall be pleased to forward copies (carriage paid) on receipt of 10s. 6d. each to any part of the United Kingdom, and for 11s. to any country abroad.

MONTHLY TRADE REPORTS.

Wool.—In the wool market in London, there has been a healthy tone perceptible, prices have kept very firm, with a slight tendency to rise, especially in the better classes of wools. In the Scotch districts, the business passing has been of a meagre description, but prices keep comparatively firm and, being at such a low ebb, in the event of any improvement in the demand for manufactured articles taking place an advance in prices is anticipated. In Bradford and Halifax the trade has been equal to the average for the months of 1882. Prices show no signs of a decline, although the demand is only small. In Leeds and Huddersfield a fair business has been done at firm rates. In the yarn and piece branches, the trade has been dull both for home and export. Rather more inquiry has been made in the home trade, but without much actual business resulting. Prices have not shown any variation.

Cotton.—In the market for the raw material fluctuations, both in the demand and prices, have been numerous. At the beginning of the month, values commenced to decline rapidly, and continued, with slight fluctuations, to do so until the third week in the month, when prices rose slightly, and remained firm to the end of the month. Yarns experienced a limited demand during the early part of the month, but towards its close an improvement took place, and large orders were placed. In the cloth branches a decided improvement in demand has been felt in nearly all departments. For the East—large

quantities have been sold, at fairly remunerative rates. Many orders have also been secured by manufacturers which have been taken at paying prices.

Woollen.—This branch of the textile trade, still shows the same favourable aspect that it has done for some time. With some slight exceptions, the demand for all classes of goods is good, both for home and export. The exceptions are mostly in the heavy woollen districts, where the demand is only of a meagre kind; however, hopes are entertained of a speedy improvement, as merchants have only light stocks of the heavy makes of cloth. In plain twills for worsted coatings and in small and neat patterns for fancy goods. The demand is good and the call for tweeds of a cheap class is also good. Prices have a decided tendency to rise.

Linen.—The business in linens has improved considerably in the Scotch districts, the markets for nearly all classes of goods have been firm, and prices have been very firm. The manufacturers have been so busy lately, that the operatives have taken advantage of it, in some districts, and have demanded an increase of wages. In the Jute departments the demand for goods is good and prices also keep firm. In Dundee, especially, business has been of a satisfactory nature. The export trade is of an improving character.

Carpets.—The demand for Carpets cannot be said to have improved to any great extent during the month. Business is below the average of this time of the year. Prices are at a very low level indeed, and the margin for profit gets gradually less, for the prices of the raw material and of yarns leave very little hope of manufacturers doing a remunerative trade, unless higher rates can be procured for their carpets. Orders are not difficult to obtain, if low prices are taken.

Lace.—The trade has improved during the month, in nearly all departments. The home trade has improved in a fair degree and the demand for the Continent and the United States has also improved; a fair number of orders have been given out. A moderate business has passed in the curtain branch, but there is a general complaint of the unremunerative character of this part of the trade. Prices on the whole keep firm. The outlook for the future is hopeful.

Fashionable Fabrics.

In a trade article "*The Warehouseman*" says, the now beginning season, is to be another fancy one, that is, fancy goods will be in favour again of one kind and another, in contradistinction to the graver kinds; and chintzes in high colours and bright effects will be in as much favour as goods of this class were last spring. Not but what a certain amount of neat and plain coloured goods will be sold, especially in plain dress goods of *recherché* colours, many of these toned down and softened to flat hues, but these will be enlivened by gay effects in the way of appliances of other materials in the form of trimmings. It will be remembered that last spring a great many fancy silks, and silk-mixed goods, were sold in this way during its course, but the demand fell off for these kinds of fabrics very seriously in the autumn half of the year. In our opinion this was only to be expected, considering the silken, mixed satin, satin and velvet, satin and gauze, and the numbers of fancy trimming materials that were brought out, suitable enough for summer wear, but not appropriate for autumn and winter; so that, by a parity of reasoning, there would be as fair a chance of these succeeding in the present year as in the last one, but unfortunately the autumn trade has had the effect of discouraging many silk manufacturers who have not catered to the liberal extent they did last year, looking upon the slight revival of the silk trade last spring as merely a "flash in the pan," as it is sometimes termed, which is somewhat a pity, as a trade can only be kept alive, when in a sickly condition, by the production of novelties and new effects; but, unfortunately, when a trade stands most in need of this sort of thing it generally has the least given to it, because there is not that spirit or willingness to expend time, labour, and money when the results are very uncertain, so that very often definite branches of production get less pains bestowed on them when they have the most pressing occasion for liberal catering in the way of production of novelties.



DAMASK.



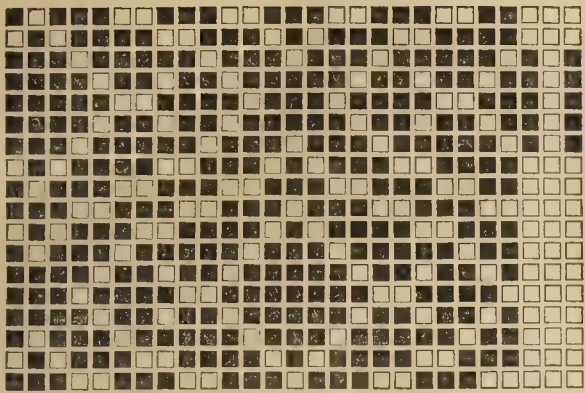
FRANKLIN
INSTITUTE
LIBRARY.

TAPESTRY FABRIC.

ORIGINAL DESIGNS.

Coatings.

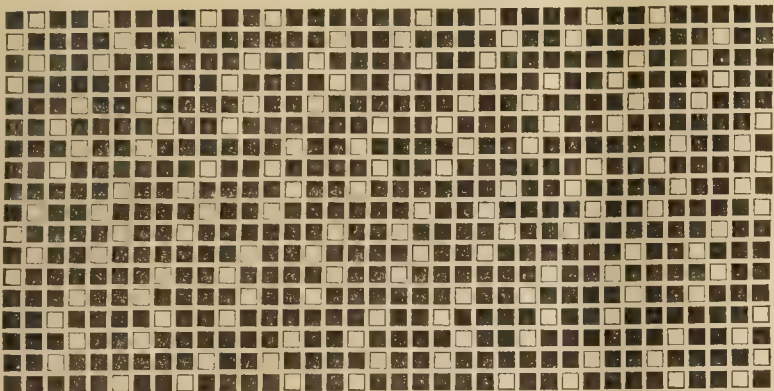
No. 32.



No. 32 is a pattern suitable for a Union Cloth with cotton warp.

Design.

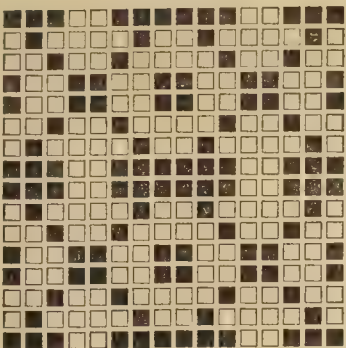
No. 33.



No. 33 is a design for a Union Cloth to weave with 18 shafts.

Design.

No. 34.

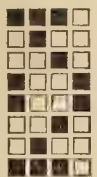


No. 34 is an 8-end Reversible pattern for a cross-over Diamond effect, which can be woven with 4 shafts. It is most suitable for an ordinary Worsted Coating.

Design.



Draft.



Pegging Plan.

35.



No. 35. is a 16-end Zigzag stripe pattern drafted to weave with 5 shafts. It is a design for a Worsted Coating.

Design.

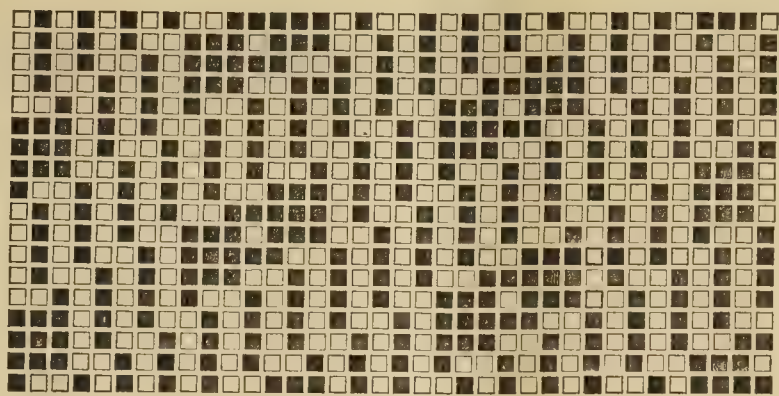


Draft.



Pegging Plan.

No. 36.

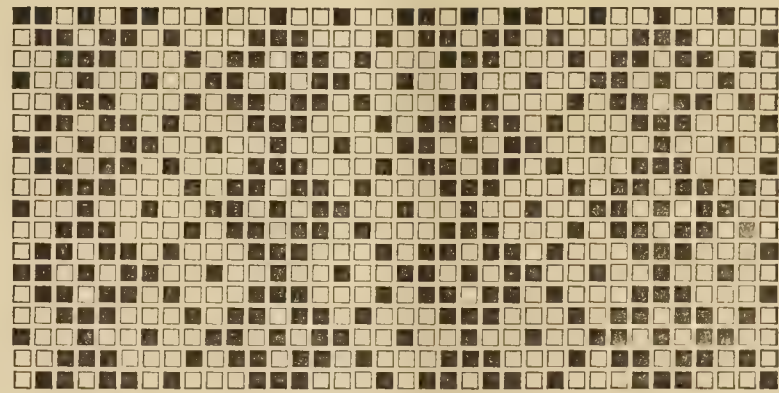


No. 36 is a Corkscrew pattern for a Worsted Coating of 36 shafts. The white in the design represents the warp.

Design.

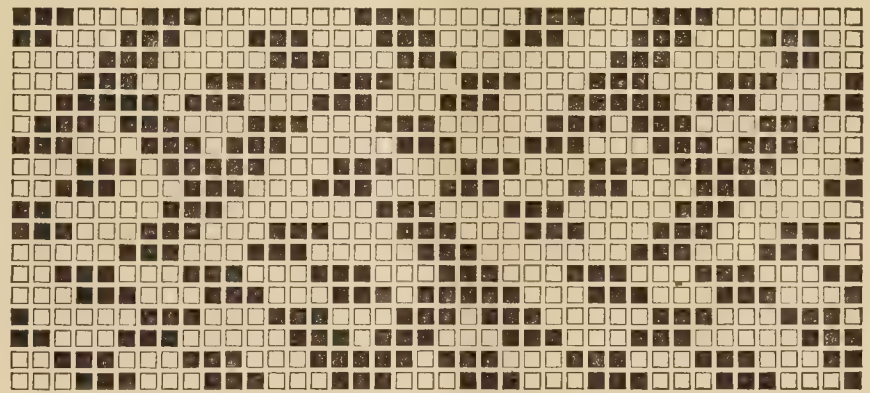
Ground Effects for Stuff Goods.

No. 37.



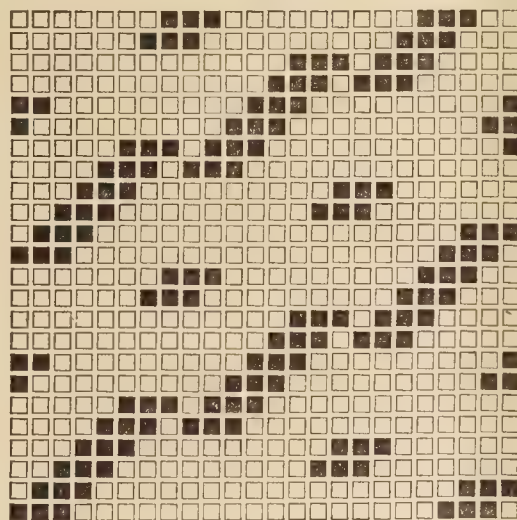
Design.

No. 38.



Design.

No. 39.



Design.

Nos. 37, 38, and 39 are designs for Ground effects for Stuff Goods; they may also be adapted to other fabrics. No. 37 will also make a good pattern for a Worsted Coating.

New Green Colour.

According to Ad. Carnot, a non-poisonous and permanent new green colour may be prepared as follows:—A solution of bichromate of potash is mixed with a sufficient amount of phosphate of soda; sodium acetate and sodium thiosulphate are added, and the slightly acidified mixture is boiled for an hour. A fine green precipitate is thrown down, which is not volatile, and is perfectly fast against air, light, dilute acids, soap, &c. It may be used for painting, calico printing, &c. For dyeing, the material to be dyed is treated with a mixture of bichromate, phosphate, and acetate of soda, and is then boiled in a slightly acidulated bath of thiosulphate of soda.



Huddersfield Fine Art and Industrial Exhibition.

As we announced in our December number, the Council of the Huddersfield Technical School and Mechanics' Institute have decided to hold a Fine Art and Industrial Exhibition, in connection with the opening of the New Technical School and Mechanics' Institute, in June next, and a large Committee has been appointed for that purpose.

The new building, now nearly completed (a view of which we give) together with a large shed for machinery, and a spacious annexe to be erected on the adjoining land, will provide ample room for a most extensive exhibition. The large shed being lighted from the roof is admirably adapted for the exhibition of engines, mechanical tools, and machinery in motion, which it is intended to make a very important and prominent feature in the exhibition. It will comprise combing, carding, spinning, weaving and

needlework, also various manufacturing processes, as electro-plating, the potters' wheel, glass blowing, knitting, lace making, and boot and shoe making by machinery, &c., &c.

Prices may be placed upon exhibits, but only in such form as the Committee may determine. No exhibit will be allowed to be removed from the building until after the close of the exhibition, except from the selling stalls. No charge will be made to exhibitors for space except in the case of stalls where articles are exhibited for sale and immediate removal. The Committee retain the right of rejecting any article which, in their judgment, is unsuitable for exhibition, and any previous allotment of space for such article shall not prejudice this right of rejection. Motive power and main shafting for the machinery will be provided free of expense to exhibitors, but the necessary pulleys, connections, belts, and other driving gear must be supplied by the exhibitors. The machinery will be driven by a patent high pressure engine, kindly lent by Messrs. Galloway and Sons, of Manchester. All exhibitors will be required to abide by the regulations made by the Committee as to time of running machinery, and for the general management of the exhibition. Pictures, works of art, articles of vertu, and other loan exhibits, will be insured against loss or damage by fire to such amount as may be stated by exhibitors when they are delivered to the collector. Watchmen will be on duty day and night during the whole time the exhibition is open, and the utmost care will be taken to secure the safety of every exhibit, but the Committee does not hold itself liable for damage to, or for the loss of trade exhibits. No person will be allowed to make copies or sketches of any exhibit except with the written permission of the exhibitor, and under certain conditions imposed by the Committee. All machinery must



HUDDERSFIELD TECHNICAL SCHOOL.

all descriptions of machinery used in the woollen and worsted trades, as well as a variety of machinery adapted to other textile manufactures. Models, mechanical designs, and metal work will also be exhibited in this department. In the manufacturing department it is intended to make as complete a display as possible of the various textile manufactures, giving special prominence to the woollen, worsted, cotton, silk, and other industries of Huddersfield and district. There will be a large and attractive collection of paintings, water colour drawings, statuary, and other works of art. It is hoped that an interesting collection of corporation plate and insignia may be exhibited, from London, and provincial corporate boroughs. The application of the arts and sciences to the various industries will be a leading feature of the exhibition, and a selection of early as well as later and more important scientific apparatus and instruments, including especially the most recent applications of electricity to lighting and industrial purposes, will be obtained. It is proposed to light the whole or some portion of the building, with the electric light. There will also be a well-selected exhibit of the best educational appliances, and particularly of those adapted to technical education. A department for natural history will be provided, and there is good reason to believe it will be well represented. The great interest now felt in naval architecture and engineering has led to arrangements being made for this to form part of the exhibition, and it is hoped that a large and comprehensive collection, illustrating the great progress recently made, will be secured. A large and interesting collection of miscellaneous exhibits, is expected, *e.g.*, musical instruments, book binding, clocks and watches, toys, dyes, leather

be delivered at the building not later than May 11th, 1883. Exhibits in other departments will be received until May 25th, 1883. Application for space must be sent in to the Secretary not later than February 21st, 1883.

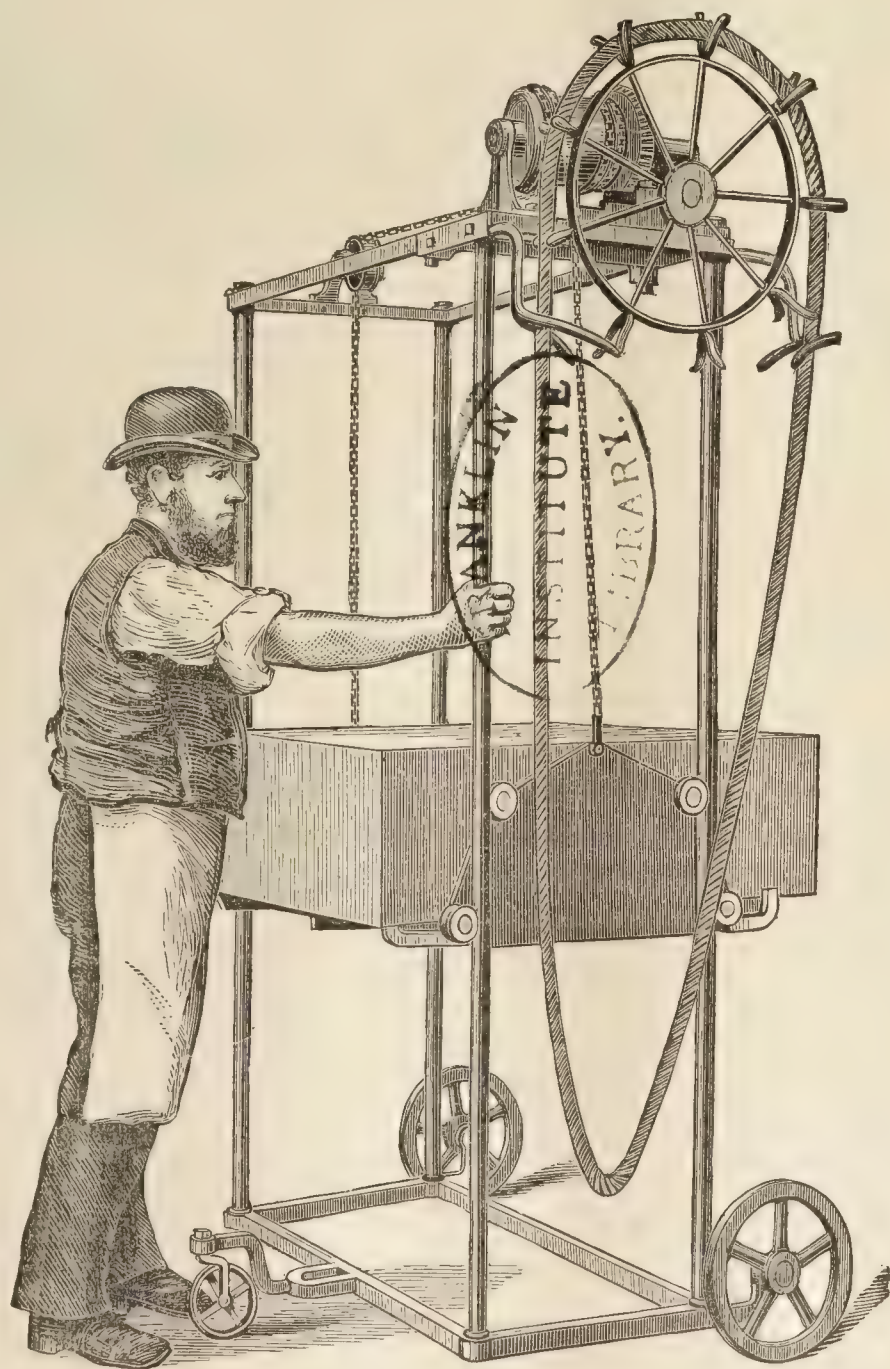
In a circular which they have just issued the directors of the Manchester Chamber of Commerce say that the construction of a trade route from British Burmah to South-Western China has for many years been warmly advocated by the commercial community. Mr. A. R. Colquhoun (executive engineer of the Indian Public Works Department, F.R.G.S., &c.) proposes an exploration and survey for a railway to connect the port of Rangoon with South-West China, through the Shan country, with the view of opening up the North of Siam, the Shan country, and South-West China to our commerce. The proposed survey is estimated to cost about £7,000. Should Mr. Colquhoun be supported by the commercial community, through the leading chambers, it is believed that government will aid the undertaking by giving the remainder, if the commercial public contribute half the cost of the survey, detaching Mr. Colquhoun on his Indian pay and allowances for the work. The directors of the chamber are desirous of giving encouragement to the undertaking, which gives good promise of opening a new and most important market to our trade and developing a region inhabited by a civilised, industrious, friendly and essentially mercantile race, which has hitherto been entirely cut off by the absence of all communications.



MACHINERY, TOOLS, &c.

A Patent Cloth Carrier.

A few months ago many complaints were made in Leeds and district by the press-setters in the employ of the dyers and finishers of the great labour they had to endure in the carrying to and fro of heavy pieces of cloth which were in the various stages of finishing. There was no doubt that the grievance was one in which a number of employers sympathised with the employed. Numerous interviews took place between the representatives of each party. The press-setters wished the manufacturers in future to weave their pieces of cloth of a shorter length, in fact, so much shorter that the arduous labour entailed in carrying the "long length" pieces would be done away with. Fortunately the dispute was not of long continuance, for, through the ingenuity of a Leeds mechanic, the difficulty was met, to the satisfaction of masters and men alike by the invention of a carrying machine. The apparatus, which we illustrate, is very simple in its



mechanism; occupies a very limited space; is extremely easy to work, and is moved from place to place without difficulty. It consists of an iron table about a yard square, which slides between four pillars to any required height by means of a rope and pulley. One man can move a piece of cloth when papered, and of a heavy make, to and fro between the press and the table, with very slight exertion. Whilst the pieces are being prepared, three hot plates can be put in the middle, and the whole carried at one time to the press or back to the table. Perhaps the best proof of the utility of the machine is to be found in the fact that a deputation consisting of masters and men, after inspecting the apparatus, expressed the opinion that it removed the difficulty complained of as to heavy weights, and that the delegates, at one of their conferences, recommended manufacturers and finishers pressing heavy goods to use one of the machines. In addition to being useful to finishers of heavy cloths, we are of opinion that the machines might be applied to many other branches of the textile trades. The sole makers of the machine is the firm of Messrs. William Ward and Sons, Old Dolphin Foundry, East Street, Leeds.

Stannic Chloride for Loading Silk.

The weight of silk can, according to a foreign exchange, be increased by the immersion of the silk in a solution of stannic chloride. The silk absorbs a certain quantity of stannic oxide, varying with the concentration of the solution, and the length of time it has been kept immersed. The silk is then washed, in order to remove the excess of uncombined salt. The same operation can be repeated, the silk being again immersed in the bath after having been passed through boiling suds and washed. Some more of the tin becomes again fixed on the silk, the weight of which can be doubled by repeating the operation several times. The silk can then be dyed to any shade. If, after having been "loaded" with the tin, the silk is passed through a tannic solution, it increases still more in weight. The tannic solution, is, however, not recommended when delicate shades have to be obtained on the silk.

Old Tapestry.

A discovery of a suite of tapestries was made in a church at Valetta (Malta) last year. The Order of the Knights of Malta had caused them to be executed at the Paris Gobelins factory about the middle of the seventeenth century. They have, however, suffered considerably from having been kept in the mouldy cupboards of a damp sacristy. In order to restore them in a suitable and artistic manner, it is said that the English Government applied to the Gobelins factory for the needful quantity of wool for the desired restoration. This request was at once complied with, but it was found that the requisite artistic and executive skill was not to be obtained in Malta to ensure the successful carrying out of the work. At the request of the English Government, it is said that M. Darcel, the director of the Gobelins factory, is proceeding to Malta with a competent assistant, and will remain there for a short time to superintend the carrying out of the process of renewal. The thread which is now used by the Gobelins factory is said to correspond exactly in shade with that of the older work, this being a point of essential importance in connexion with the proposed restoration.

Oiling Wool, for the Cards.

For some time one of the writers to *Cotton, Wool and Iron* has been urging on the cotton manufacturers in the United States, the use of the microscope in buying cotton, and in its manufacture. This has been used by many merchants and manufacturers in the United Kingdom for some years, but yet it is far from being a general practice. The above journal says:—many scouted the idea; we looked upon it with distrust; many are yet sneering at it; but the wise few are profiting by the knowledge he has gained through persevering investigation and hard labour. Ever since the commencement of cotton manufacturing, the staple has been bought on the judgment of the naked eye alone, which is not powerful enough to detect the outs in the raw to make the difference between a profit and a loss. And so it is in the purchase of, and manufacture of wool. We go on blind judgment, and although assisted by experience, cannot be real, and therefore must be uncertain, and disappointments, when least expected, follow. One writer says, and he is an old carder, that "we oil wool to prevent the serrations on the wool fibre being broken off." Now if this carder had used the microscope intelligently, he would have discovered that the serrations could not well be broken off during the process of carding except by actual abrasion, which cannot take place in this process. The object of oiling wool is twofold:—First, and most important, to lubricate it,—which is absolutely necessary,—and, secondly, to prevent its flying while in the process of manufacture. Carding is directly the opposite of fulling. It disintegrates, disentangles the locks. The oil, while holding, the wool in the cards, aids this operation, and assists very materially in the even distribution of wool in the cards, which is necessary for even work. Carders almost universally use a given number of quarts of oil for each one hundred pounds of wool. Here is another case of error in judgment, in which the naked eye, assisted by the sense of feel, is incapable of deciding.

Enlarge the fibre so that you can examine the outer surface, and the carder, with the same experience as now, with the microscope added, would detect (if the dyer had not already done so and posted him) whether the wool was in a healthy state when bought, or whether the scourer had used liquor that was too strong and injured the serrations on the fibre, or the fibre itself, or whether the dyer had injured the fibre during the process of dyeing. In such cases the carder is blamed for what is not in his power to obviate. If he is an old experienced carder, he will know where to place the blame, and if he uses a microscope, and a little shrewdness, he will find out how it was caused. The dyer who can make a good colour, that feels soft, and will stay in the cards without a surplus of oil, is cheap at almost any price. His wages are saved several times over, especially if the mill is a large one. Oil is only of use to the wool until it leaves the loom; after that, and during the process of scouring, it is the finisher's duty to make the most of it by turning it into soap, whether he scours before fulling or fulls in the grease. The finisher has as much interest in what oil is used as the carder, but for an opposite reason. While the carder is anxious to get the oil thoroughly incorporated into the wool, the finisher is equally anxious to get rid of it, and the easier he can accomplish this the better for his colours, and the feel of his goods. He will be likely to favour a soap making oil which would not be a good lubricant for wool. Manufacturing, like nature, is a continual confiction of interests, which it is the agent's duty to watch and harmonize as much as possible.

The Numbering of Yarn.

This subject has recently occupied the attention of the Industrial Society of Ameins, and a competition was organised for the best treatise on the numbering of all descriptions of textile yarns in the various industrial countries of the world. It was the special object of the society to obtain a trustworthy set of tables, which would facilitate, to manufacturers and others engaged in the yarn trade, the comparison of the numbers used by various nations. This idea has been carried out in the work sent in by M. Leon Gauche, of Lille, who obtained the gold medal, and whose services to the mercantile community were also recognised by the French Government by an academic decoration being awarded to him. The work is considered likely to be of service in preparing the industrial public of Europe for the complete discussion, at the next congress which takes place, of the long debated scheme for uniformity in yarn numbering.

In reporting upon M. Gauche's treatise to the society which instituted the competition, M. Roger has enumerated several leading points in connection with the general question of yarn numbering. He remarks that the numbering of yarns is based upon three positive elements; the length and kilometric weight, as well as the absolute desiccation augmented by the legal allowance. According to the French system, the yarn is divided into small skeins of 100 metres in length, ten of these being joined together to form skeins of 1000 metres. The quantity of these large skeins necessary to obtain a weight of 500 grammes indicates the number. The verification of moisture by conditioning is in principle optional, but it becomes obligatory, it is stated, upon the demand of one of the interested parties. This metric system, though promulgated by edict in 1810, was not immediately adopted in France, and thus, even to the present day, there are to be found, in some important business centres in France, certain illegal systems of numbering, based upon the ell, foot, or inch. The difficulty of comparison which exists as to local standards becomes more marked, when the numbering adopted in countries which have a metric system of weight and measurement comes to be compared with the numbering of countries where this system is not in force. Thus England has a yard standard for yarns, and weighs them by the English pound of 453 grammes; while various continental nations also adhere to local standards of weight and measurement.

The principle of uniform yarn numbering was adopted at the Vienna Congress in 1873, but its application has met with the difficulties that might be expected. The tables drawn up by M. Gauche are, therefore, considered likely to be of material service to those engaged in the yarn trade for some time to come.

Turkey-Red from Alizarine.

Fifty grammes Turkish-red oil are dissolved in 1400 c. c. water, 15 grammes of 22 per cent. alizarine added, also 0.2 grain of tannin. The mixture is then slowly heated to boiling temperature, and 60c. c. are added of a solution of aluminum sulphite of 1.1014 specific gravity, which has been previously mixed with 22 per cent. of soda crystals. On prolonged boiling, the alizarine lake separates out, which is freed from excess of oil by washing with ether. It then forms a powder of splendid carmine red colour, which is constant in the light, and is not attacked by dilute acids and alkalis. It still contains a certain quantity of oil, which cannot be removed by ether, but which causes the lustre of the preparation. When mixed extremely well with water, the lake can be used for dyeing tissues in shades similar to those produced by eosine. By using other mordants than alumina, different shades can be obtained.—[A. Müller-Jacobs, Moskau.

Aniline Black on Cotton.

Mr. Huste gives the following method for dyeing cotton, either raw or in yarn or tissue in aniline black.

The cotton is dipped in a bath composed with a concentrated solution of aniline salt and of chlorate of potash or another chlorate. When the cotton is well saturated it is taken out, freed of the excess of liquid and dried in a well-ventilated room. The colour is afterwards oxydised; this can be done by steeping the dried cotton in a bath containing bichrome of potash or any other oxydising agent. When the required shade is obtained the cotton is taken out of the bath and washed.

ODDS AND ENDS.

The negotiations relating to the Mexican and United States reciprocity treaty have been concluded, and the treaty has been laid before the President. It admits 77 American articles free into Mexico, and 28 Mexican articles free into the United States. The President will send the treaty to the Senate soon. Its ratification is regarded as sure to be decreed.

The Cotton industry in Spain is chiefly carried on by the Catalonians. Exclusive of establishments running fewer than 1,000 spindles, the total number of cotton mills in the province of Barcelona is about 1,400, running about 1,300,000 spindles, which consume annually from 24,000,000 to 30,000,000 kilows, of raw cotton. There are some 50,000 looms, producing about 250,000,000 meters of cotton fabrics of all kinds. There are employed in the manufacture of cotton fabrics some 135,000 persons, whose wages range from 10d. to 2s. 11d. a day, ten working hours.

In addition to the Leeds and Huddersfield districts, Bradford is now sending out a good many light-weighted cloths, which are finding their way into the market, while the old makers are increasing instead of diminishing their production, and those rumours which are more apt to gain credence in a flat time of the year, really we think amount to but very little, and trade prospects, we doubt not, in this line, will be as satisfactory as ever.

An effort to organize a protection society among the proprietors of the hemstitching factories of Lurgan has failed, owing to a number of the leading capitalists absenting themselves from a meeting called for that purpose. The veining and hemming of cambric handkerchiefs has within the last few years become a very important element in the industries of that town, and affords remunerative employment to thousands of females, but so many additional factories have been added of late that a temporary reaction has been produced, and prices have had to be considerably reduced in a number of concerns so as to keep the workers together, and to prevent the dismissal of as few as possible.

Formerly the London Market was almost exclusively the market for Asiatic silk, and upon short supplies taking place on the Continent, and when European silk ruled very high, French, Italian, and other silk dealers largely supplemented their stocks by the acquisition of Asiatic silks, which got into use more and more abroad, on account of repeated failures in the European silk crop, so that much more attention has been paid to China, Japan, Bengal, and Canton silk by those foreign dealers, with the result that a good deal is now sent direct to Marseilles and other ports which, under the old régime, would have come to London; and what has been done in the case of the silk trade it is now being sought to do with wool, the Germans perhaps taking the most pains to ensure this end.

NOTICE TO ADVERTISERS.

Advertisements will be inserted at the following rates; (in all cases prepaid): *Twenty words, One Shilling; Sixpence* for each additional *Twelve* words or part of *Twelve*. The address being counted as part of the Advertisement.
Displayed Advertisements according to arrangement.

Wanted.

WANTED a small WOOL WASHING MACHINE; must be in good working order—Address Lloyd Jones, Langollen.

Agency.

AGENCY in WOOL and HAIR.—An old Danish firm, adapted for purchase of, and with a considerable annual sale of all kinds of Wool and Hair—say chalk wool, lamb wool (clip wool), cow and calf hair, &c.—wishes to REPRESENT an English house or manufacturer, for the purchase of these goods from first hand, in original condition, which can always be delivered, in consequence of connection with most of the producers of such goods in Scandinavia. First class references.—Address T 2, Mercury Office.

Mill to Let.

TO LET or SELL, the very convenient MILL, known as Elmfield Mill, Bramley, near Leeds, with the counting-house, rag shed, 4 cottages, stable and other buildings, reservoirs, and land thereto adjoining, lately in the occupation of Messrs. Hoyle and Harrison. The mill is situate near the Bramley Railway Station, is 3 storeys high, well supplied with water, and adapted either for a woollen, cotton, or worsted mill, or for the leather or shoe trade. Immediate possession.—Apply to David Newton, Auctioneer, Paddock Lodge, Bramley; or to Henry Snowdon, Solicitor, 13, East Parade, Leeds.

THE GAZETTE.

Adjudication of Bankruptcy.

Cockill John, jun., Beaumont Street and Market Street, Huddersfield, woollen manufacturer.
Humphreys David, Australian Avenue, London, mantle manufacturer.

Sequestration.

Alexander and Macnab, Craigneuk, near Motherwell, storekeepers, and Charles J. and Ebenezer Alexander, Hawick, manufacturers, the partners.

Liquidations by Arrangement or Composition.

Wood James William, trading as W. Wood and Co., Folly Hall and Primrose Hill, Huddersfield, yarn spinner.
Halsted Henry Richard, trading as H. R. Halsted and Co., Eccleshill and Well Street, Bradford, stuff manufacturer.
Molyneaux William Henry, trading as Molyneaux Bros., Lyme Street and Hulme Street, Chorlton-upon-Medlock, skirt manufacturer.
Williams Robert, trading as Robert Williams and Co., Church Street, Manchester, and Fallowfield, near Manchester, linen merchant.
Stevenson Robert, 28, Cannon Street, Manchester, and Middleton, Lancashire, yarn merchant.
Sawer Joseph, trading as Sawyer and Co., East Keswick, near Wetherby, and Swaine Street, Bradford, stuff merchant.
Musgrave John, Kirkstall Road, and Park Place, and Rosemount, Tong Road, Armley, late School Close Mills, Leeds, cloth manufacturer.
Brown William Booth, Mosley Street, Manchester, and Wash Lane, Timperley, Cheshire, velvet and velveteen manufacturer.
Booth Ainsworth, Huncoat, near Accrington, cotton manufacturer.
Blake John, Robert Lewis Cook, and Alfred Thomas Cook, trading as Blake and Cook Bros., Wharf Street, Leicester, hosiery manufacturers.
Barrett George and James Whitehead Barrett, trading as George Barrett and Son, Churchwell, Bailey, and Park Place, Leeds, cloth manufacturers.
Cordingley Charles, trading as Charles Cordingley and Co., Mill Street and Sefton Place, Bradford, woolstapler.
Barlow Samuel, trading as Barlow and Co., Radcliffe, near Manchester, and Cleveland Buildings, Manchester, bleachers and dyers.
Hopwood James and Arthur Orrah, Albion Street, Huddersfield, woollen cord manufacturers.
Shepherd Aaron, and Ernest Shepherd, trading as Ernest Shepherd, Green Lane, Baildon, Yorks, and Cromwell Road, Shipley; and Swaine Street, Bradford, stuff finishers.

Dividends.

Barker Albert N. (Liquidation), Bradford, worsted spinner and manufacturer, 1st and final dividend, 11s.; J. Bolton, the Exchange Tower, Market Street, Bradford.
Godfrey Harry and Robert Cooper, jun. (Liquidation), Coventry, trimming manufacturers. 1st dividend, 5s.; E. T. Pierson, 46, Jordan Wall, Coventry.
Illingworth John, trading as John Illingworth and Co. (Liquidation), Ilkley and Baildon, Otley, both Yorks, worsted spinner. 2nd and final dividend, 1s.; W. Glossop, 33, Kirkgate, Bradford.
Cooper Isaac D. (Bankrupt), Mulgrave Terrace, Scarborough, woollen merchant. 1st and final dividend, 1s. 9d.; J. Overend, 15, Park Place, Leeds.

Whitaker Herbert A. (Liquidation), Bradford, silk spinner, and trading as H. A. Whitaker and Co., Tong, near Bradford, dye merchant and agent (separate estate). 1st dividend, 2s.; J. D. Taylor, Halifax.
Roberts Henry (Bankrupt), Burnley, cotton spinner. 3rd and final dividend, 3d.; J. Rawlinson, Nicholas Street, Burnley.

Trustees Appointed.

Kitching William and Frank Kirkley (Bankrupt), Huddersfield, woollen and stuff merchants, Trustee, W. H. Armitage, Huddersfield, accountant.
Good Frederick W. (Liquidation) Nottingham, lace manufacturer. Trustee, H. P. Day, Nottingham, accountant.
Beswick James (Liquidation), Burnley, cotton manufacturer. Trustee, J. Rawlinson, Burnley, accountant.
Morris George (Liquidation) Nottingham, lace manufacturer. Trustee, C. Rogers, Nottingham, accountant.
Whiteley Tom (Liquidation), Huddersfield, fancy cloth manufacturer. Trustee, W. H. Armitage, Huddersfield, accountant.
Farrar Abraham (Bankrupt), Todmorden, Yorks, cotton manufacturer. Trustee, T. Crowther, Todmorden, accountant.

Dissolutions of Partnership.

Paterson and Blackley, Blackley, near Manchester, manufacturers of coloured goods. Debts by James Paterson.
Whiteley Bros., Longwood and Victoria Mill, Golcar, both near Huddersfield, cloth finishers.
Hutchinson and Richardson, Midland Buildings, Bradford, and Gilesgate, Durham, stuff and woollen merchants.
Lee and Kettle, High Street, Manchester, woollen merchants. Debts by John Henry Lee.
Lee, Kettle and Lees, Moses Gate, near Bolton, cotton spinners. Debts by John Henry Lee.
Shackleton James and Sons, Hebden Bridge, Yorks, fustian manufacturers. As regards James Shackleton.
Mills and Clegg, Green Mill, near Rochdale, cotton spinners and manufacturers. Debts by William Mills.
Prain J. and Sons, Dundee, jute spinners, &c. Debts by J. E. Prain and J. Prain, jun., who continues the business.
Onion and Meeklah, Sherwood Street, Nottingham, lace manufacturers.
Pidduck and Dunnill, Princess Street, Manchester, grey cloth agents and merchants. Debts by Joseph Pidduck.
Menzies William and Co., Moss Hey Mill, Shaw, Lancashire, cotton spinners. As regards William Reid Corson.
Fielding and Clayton, Gledholt Mills, Paddock, Huddersfield, waste openers and scribblers.
Houghton and Lockwood, Huddersfield and Barnsley, woollen merchants.
Hargreave and Nusseys, Wortley and Leeds, cloth manufacturers.
Walmsley, Ramsbottom and Co., Spring Gardens, Manchester, cloth agents. Debts by John Walmsley.
Hall and Wainwright, Leicester, hosiery manufacturers.
Brooke J. and J., Sowerby Bridge, woollen manufacturers. Debts by James Brooke.
Feber, Holt and Eastwood, Cornholme, near Todmorden, cotton manufacturers.
Crowther Timothy and Sons, Buxton Road, Huddersfield, woollen cloth merchants.

Bills of Sale.

Allen W., King Street, Heckmondwike, woollen spinner	£81 16 0
Akerigg J. H., Carlisle, woollen manufacturer.	
Gembitzki S., Cheetham, near Manchester, cap manufacturer	£130 0 0
Fowden W. R., 24, Bloom Street, Salford, shirt manufacturer	£47 2 0 a.s.
Hill F. R., 18, Peardon Street, Wandsworth, lace buyer	£60 0 0
Jarvis H. W., 39, Warlock Road, Paddington, manufacturer of lace	£38 0 0 &c.
Mackenzie H., 14, Victoria Terrace, Derby, tailor and draper	£305 2 6
Beaumont George, Shore Mill, Oldham, cotton spinner	£200 0 0

PATENTS.

Specially compiled for "THE JOURNAL OF FABRICS AND TEXTILE INDUSTRIES" by G. G. M. HARDINGHAM, C.E., Fellow of the Institute of Patent Agents, 191, Fleet Street, London, E.C.

Applications for Letters Patent.

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(All of 1882.)							
40	43	53	54	77	92	(All of 1883.)	

Notices to Proceed.

(Notice of opposition to the Sealing of a Patent must be given within Twenty-one days of the Notice to Proceed being advertised in the Commissioners of Patents Journal.)

Carpets. J. H. Braithwaite, Airethwaite, Kendal	21st July	3470
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3569	3599	3615	3626	3657	3675	3715	3765
3826	4263	4798	5009	5232	5320	5464	5691
(All of 1882.)							

Patents on which the Stamp Duty of £50 has been paid.

J. H. Johnson, of 47, Lincoln's Inn Fields, "Improvements in colouring fibrous materials, yarns, and fabrics." A communication.	20th Jan., 1880	251
Charles E. Bennett, of Birch Vale, near Stockport, "Improvements in the construction of apparatus used for bleaching cotton or other yarns, cops or cloth."	7th Jan., 1880	66
David S. Bles, of Manchester, "Improvements in the treatment of cotton yarns or fabrics for preventing mildew."	12th Jan., 1880	131
Ernest Posselt and Rudolf Peters, both of Bradford, "Improvements in dyeing mixed textile fabrics and yarns." A communication.	7th Jan., 1880	57
John Boyd and Thomas A. Boyd, both of Shettleston, "Improvements in machinery for winding, reeling, warping, dyeing doubling, twisting, and spinning yarn or thread." A communication.	24th Jan., 1880	323
Ernest Posselt and Rudolf Peters, both of Bradford, "Improvements in dyeing cotton warps and cotton aniline black, and in apparatus connected therewith." A communication	31st Jan., 1880	445

Patents on which the Stamp Duty of £100 has been paid

Henry W. Whitehead, of Holbeck, "Improvements in machinery for combing, preparing, and drawing wool and other fibrous materials."	29th Jan., 1876	365
Richard R. Hattersley, of Keighley, and Thomas Pickles, of Denholme, "Improvements in looms for weaving."	7th Jan., 1876	83
Isaac Bailey and Daniel Smith, of Keighley, and Leonard Smith, of Bradford, "Improvements in machinery or apparatus for combing wool or other fibrous materials."	11th Jan., 1876	123
William E. Gedge, London, "Improvements in sewing and embroidering machines." A communication.	19th Jan., 1876	212
James J. Johnstone, of Bootle, "Improvements in machinery for cleaning long haired and woolly skins."	18th Jan., 1876	185
George H. Nussey and William B. Leachman, both of Leeds, "Improvements in machinery or apparatus for pressing woollen and other woven or felted fabrics."	21st Jan., 1876	242
John M. Hetherington, of Manchester, "Improvements in machinery for combing cotton and other fibrous material."	21st Jan., 1876	254

Copyright of Designs.

(Registered during January, 1883.),

Class VI., Carpets.

391,998—392,000	Michael Nairn and Co., Kirkcaldy
392,068	Henry, Whyte and Strahan, National Floor Cloth Works, Kirkcaldy, Fife.
392,167-69	H. R. Willis and Co., Kidderminster
392,622	W. Green and Sons, New Road Mills, Kidderminster
392,654-55	Thomas B. Worth, Severn Valley Mills, Stourport
392,744	Michael Nairn and Co., Kirkcaldy

Class XI., Furnitures.

392,028-29	Rosendale Printing Company, Manchester
392,065	Thomas Hoyle and Sons, Limited, Manchester
392,184-86	Salis Schwabe and Co., 41, George Street, Manchester
392,358 61	D. Lee and Co., Fountain Street, Manchester
392,687-89	D. Lee and Co., Fountain Street, Manchester
392,527-28	Salis Schwabe and Co., 41, George Street, Manchester
392,695-97	Weiss Fries, Mulhouse
392,721	Thomas Hoyle and Sons, Limited, Manchester
392,722	D. Lee and Co., Fountain Street, Manchester
392,765-66	Rosendale Printing Company, Manchester
392,827-29	D. Lee and Co., Fountain Street, Manchester
392,833-54	W. Woollams and Co., 110, High Street, W.
392,922-23	Thomas B. Worth, Severn Valley Mills, Stourport
392,946-47	D. Lee and Co., Fountain Street, Manchester
392,995	D. Lee and Co., Fountain Street, Manchester
392,961	R. Dalglish Falconer, Manchester and Glasgow
393,100-01	Hiltermann Brothers, Manchester
393,153-54	S. and F. Sternberg, 44, George Street, Manchester

The Journal of Fabrics AND Textile Industries.

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Notices.

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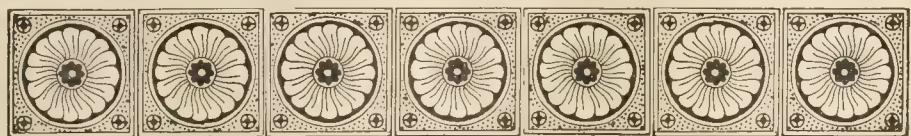
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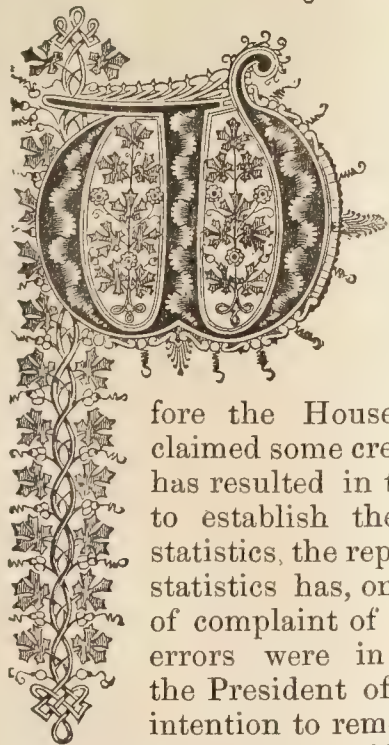
To prevent any misunderstanding, all Articles sent to the *Journal of Fabrics and Textile Industries* for publication, will be considered as offered *gratuitously* unless it is stated explicitly that remuneration is expected.

Readers are invited to forward items of interest to the Trades concerned.

The Proprietors will feel greatly obliged if any of their readers in making enquiries of, or opening accounts with Advertisers in this paper, will kindly mention the *Journal of Fabrics and Textile Industries* as the source from whence they obtained their information.



The Annual Meeting of the Associated Chamber of Commerce.



WE have again to chronicle the proceedings in connection with the annual meeting of the Associated Chambers of Commerce, under the presidency of Mr. Monk, M.P. The Executive Council, in their report for 1882, made reference to a number of questions which, during the last session of Parliament, had been brought be-

fore the House of Commons, and the association claimed some credit in respect of that movement, which has resulted in the determination of the Government to establish the parcels' post. Referring to trade statistics, the report said—"The unreliability of British statistics has, on several occasions, formed the subject of complaint of the association, and instances of grave errors were in 1881 embodied in a memorial to the President of the Board of Trade. The reported intention to remove the Commercial Statistics Department from the Board of Trade to the Treasury was unhesitatingly condemned by a unanimous vote of the association at the annual meeting in 1882. A Statistical Inquiry Committee took evidence at the Treasury in 1882, before which some members of the council were called, but no report has as yet been published. The council have already expressed to the Prime

Minister, in Mr. Monk's letter of the 22nd November last, their strong opinion that the functions of the present Statistical Department in the Board of Trade should be not only maintained but materially extended by being charged with the duty of collecting and publishing the statistics on agriculture, trade, manufacture, shipping, and mining in all their branches." Reference was made to the late treaty with France as follows:—"The chambers are so fully aware of the circumstances of the negotiations for the renewal of the Treaties of 1860 and 1873, which failed to lead to the conclusion of a new tariff treaty, that it is unnecessary to advert to them in this report. It is sufficient to point out that our trade with France now receives most favoured nation treatment in virtue of a law passed by the French Legislature on the 28th February last. The Customs' classification of goods and duties in France are therefore at present regulated either by the French general tariff or by tariffs annexed to treaties between France and other foreign Powers. It is unnecessary to prove at length that tariffs so framed in many respects press unduly on our manufactures. The council trust, therefore, that means will be found before long to reopen negotiations with the view to remedy the complaints of our woollen, worsted, and cutlery trades more especially; and to place the commercial relations between this country and France on the satisfactory footing they were on from 1860 to last May, to the great benefit of the friendly relations between the two Powers."

A discussion then took place on technical education, and the following resolution was adopted:—

"That it be recommended to every chamber composing this association, either separately or in combination with one another, to take steps, as far as possible, to provide technical instruction in its local trades, and that each chamber should nominate a committee to promote this movement."

The subject of a Ministry of Commerce was next considered and Mr. McLaren (Bradford) moved the resolution as follows which was adopted:—

"That while trusting that the promised Ministry of Commerce will be established in accordance with the twice repeated votes of the House of Commons, the association desire again to express the conviction that no arrangement will be considered satisfactory by the commercial and industrial community unless the new department be entrusted with the functions and possess the powers indicated in the President's letter of November 22nd, 1882, to the Prime Minister, and that the Executive Council be requested to support these views by every means in their power."

Reference was then made to the promised Bill for bankruptcy reform, Mr. Knight moving a resolution to the effect:—

"That this association views with great satisfaction the introduction of the long promised Bill for bankruptcy reform, and their determination to pass the same during the present session. That the chamber approve of the main principles of the Bill introduced in 1881, and generally of the provisions contained in that measure, and requests the executive council to watch the Bill through the House, and take steps to introduce such amendments of detail as may be in the interest of the trading community."

The Chairman said the resolution covered a wide field, but if the chamber desired to adopt it he saw no objection to it. Mr. Dobson (Derby) seconded Mr. Knight's resolution, which was amended by leaving out the reference to the Bill of 1881 and by the addition of a committee to consider the subject in connection with the executive council. In the amended form the resolution was carried. Subjects of minor importance were afterwards discussed and the meeting dissolved.

In testing lubricants, blue litmus paper will become red in melted acid fats or oils, such as stearic acid, as well as in acid watery solutions. But oil may be tested for free acid by pouring it over a layer of cuprous oxide contained in a glass. If the oil contains either the free, fatty, or resinous acid they will attack the oxide and colour the oil green in a very short time. Slightly heating accelerates the action.

* * * *

Messrs. Hick, Hargreaves and Co., of Bolton Soho Iron-works, are at present completing engines of enormous proportions, which will be the largest in the world, for an immense cotton mill in Bombay. They are for one of the Manockjee Petit Mills, owned by Mr. Durshaw, a wealthy Parsee. The largest mill engines used in this neighbourhood are of about 1,000 horse power, whilst these are of 4,000 horse power, with cylinders of 50in. and 84in. diameter, and 8ft. stroke, with steam 100lb. pressure, and 720ft. piston speed per minute. The fly-wheel is 140 tons weight, 30ft. in diameter, and about 15ft. wide on the face. The Eagley Mill engines, which were recently supplied by the same firm, are the largest single engines in this country, indicating 1,800 horse power. Messrs. Hick and Co. have also in hand engines of 400 horse power, which will be the first ever erected in Baroda, and a short time ago the first set of engines were sent by the firm to Japan.

Cotton.

(Continued from Page 14.)

In every kind of spinning, whatever the material may be, it is necessary to disentangle the fibres, to draw them out, and to place them side by side, before they can be twisted into threads. This is partly done by carding, but the fibres are loose and not laid as parallel as they require to be in machine spinning. The sliver is then passed between two or more pairs of rollers placed horizontally, the upper and lower roller in each pair acting in contact. The roving being passed between the first pair of rollers acquires a greater degree of firmness, but it requires also to be drawn out in length; this is done by the second and third pair of rollers revolving from three to ten times faster (according to the degree of fineness required) than the first. The sliver is then connected with a spindle and fly, and the rapid revolutions twist it into a thread and wind it on a bobbin, leaving to the workman only to supply the roving, and join any broken thread. Richard Arkwright is generally supposed to have been the inventor of this "water frame," or, as it was afterwards called the "throstle," but it has been proved by a specification still in existence, that thirty years before this time, in 1738, John Wyatt, of Birmingham, invented a machine on the above principle, and obtained a patent for it in the name of his partner, Lewis Paul, Wyatt giving his signature as a witness only to the specification of the patent. The machine was used in 1741 and for two or three years later. It was then given up and a new patent taken out by Paul, but it met with little or no success. It is also stated, but there is no reliable authority to depend on, that in 1767 a man named High made a machine on Wyatt's principle and engaged a clockmaker to help in the brass work, that he communicated particulars of the invention to Arkwright, who, with the former's assistance, brought the machine to greater perfection. Arkwright was the youngest of thirteen children, born in Preston in 1732, of parents in humble circumstances, his education therefore was very limited. He was apprenticed to a barber and up to the time of his invention he continued to earn a maintenance by this business. After he had nearly perfected the machine he was at a loss for capital to give the undertaking a trial. About the same time that Hargreaves left his native village, Arkwright also was obliged to quit his home from fear of violence, and he, too, took up his abode at Nottingham. At this place he induced Messrs. Wright, bankers, to supply him with the necessary funds to carry out his experiments on condition that they shared in the profits. But they, finding that he required more money than they had anticipated, and that the machine was not likely to be brought into working order for some time, advised him to apply to some one else to take their place and to repay their money. They named Mr. Need, who had been before engaged in patent discoveries, as one likely to do this. Arkwright applied and was told to take his model to Mr. Strutt (Mr. Need's partner in the stocking patent), for his inspection. Mr. Strutt seeing that all that was needed to make the invention complete was the adaptation of some of the wheels to each other, made arrangements with the inventor. In 1769 Mr. Arkwright obtained a patent for spinning with rollers, and Mr. Strutt and Mr. Need became his partners in the concern. He built a mill in Nottingham to be worked by horse-power, but this method of giving motion to the machinery being too costly, in 1771 he erected another at Cromford in Derbyshire, using water power. In 1772 Arkwright's patent was disputed on the ground that he was not the original inventor, but a verdict was given in his favour, and from that time his right was undisturbed. The first great and important improvement introduced by this machine was the production of a firm hard thread for warps, this thread now took the place of linen which had before been used, and now goods entirely cotton were for the first time produced in England. Whilst the spinning frame was employed in making warps, the jenny was used chiefly for the production of weft, so that the machines assisted each other in spinning. In 1775 Arkwright took out another patent for inventions and combinations of machinery for preparing cotton for spinning, but many of his fellow-manufac-

turers, jealous of his success, and being possessed with the idea that these inventions were not his own, used his machines without obtaining his licence. In order to prove his claim to the patents he commenced actions against nine different persons. The Lancashire spinners combined together to defend themselves against these actions and a verdict was given in their favour, on the ground that the specifications "did not contain such a full and clear account of the invention as would enable any one to take advantage of it, after the expiration of the time for which the patent was granted." In 1785 the case was again tried, this time in the Court of Common Pleas, the inventor urging that the machines were sufficiently described in the specification. Lord Loughborough, the judge, coinciding in this opinion, decided in favour of the patentee; but the Lancashire spinners being unwilling to pay the royalty on the patent in the same year appealed to the Court of King's Bench, and Arkwright finally lost his suit. Besides the above patents, Arkwright invented numerous other machines used in the different processes of preparing the cotton for spinning. Although he was not successful in establishing his claim to his second patent, yet he enjoyed a fair share of prosperity; he managed his numerous concerns, to which his discoveries gave rise, with so much skill that he became not only very wealthy, but a leader amongst his class. In 1786 he was appointed High Sheriff of Derbyshire, and having to present a congratulatory address to his Majesty, George the Third, on his escape from an attempt on his life, he was Knighted. He died at his residence at Cromford in 1792, in the sixtieth year of his age.

The Patent Law.

Mr. Anderson has re-introduced his bill for amending the Patent Laws, and it is to be hoped that so necessary a measure will have a better fate this year than last. The measure, which it is proposed shall be administered by three paid Commissioners, provides for the granting of patents for twenty-one years, subject to the payments of £20 at the end of the seventh, twelfth, and seventeenth years. The preliminary expenses are fixed at only £4 10s., so that an invention might be protected for the full period for a sum of £64 10s., the payment of which, shall, it is proposed, be spread over a number of years. It is also provided that a patent shall afford the same protection against the Crown as against a subject, except that the Secretary of State of any department may, with the consent of the Treasury, use for the public service any patented article, or any patented manufacturing process, on such terms as may be agreed on by the owner of the patent, or that failing such agreement, the Treasury and the owner may each appoint an arbitrator to decide between them, with the assistance of an umpire, if necessary. In addition to Mr. Anderson's Bill, there are two other Bills in the House of Commons. The following is the schedule of stamp duties on the No. 3 Patent Bills:—

	£	s.	d.
On petition for grant of Letters Patent	1	10	0
On certificate of record of Notice to Proceed	1	0	0
On the sealing of Letters Patent	1	0	0
On the Specification	1	0	0
On Letters Patent at the end of seven years	20	0	0
On Letters Patent at the end of twelve years	20	0	0
On Letters Patent at the end of seventeen years	20	0	0
On certificate of record of Notice of Objections	1	0	0
On certificate for every search and inspection	0	1	0
On certificate of entry of assignment or license	0	5	0
On certificate of assignments or license	0	5	0
On application for disclaimers	1	0	0
On caveat against disclaimers	1	0	0
On office copies of documents, for every 90 words	0	0	2
On every addition to a Patent one-half of the above stamp duties.			

The exhibition at Amsterdam appears likely to be a success. Germany will be represented by no less than 950 exhibitors, and the space originally allotted to that country has had to be increased. The applications for space would seem on the whole to have been on a more important scale than was anticipated. This has been particularly the case with the machinery department, which it has been found impracticable to enlarge, and which will, it is said be relatively smaller in extent than the other portions of the exhibition.

Easy Methods of Detecting Dyes Fixed in Wools and Fabrics.*

By J. JEFFRE.

(Continued from Page 16.)



PURPLES AND VIOLETS, 2.—Purples and violets may be classed in two groups: (1) those which are sensitive to the action of caustic potash; (2) those which resist its action.

No. 1 group comprises Campeachy purple, orchil purple, alkanet purple, the aniline violets, Perkins's violet, "Dahlia," Lumiere violet, or night blue, methylaniline, and Hoffmann's violet. All of these give some sort of reaction when treated with caustic potash solution.

Campeachy purple browns; orchil purple, if of a reddish cast, turns a bluish purple; alkanet becomes a rich blue. Perkins's violet, dahlia, and night blue turn brownish grey, much washing with water bringing back a fine violet shade. When the shades are very deep the brown has a violet cast, which might lead to the supposition that the violets are unaffected by the test. The action of the acid can be better detected in the case of two of them with the aid of ammonia. Hydrochloric acid turns Campeachy purple to a fine red. Orchil is also reddened by it. But the two cannot be confounded, as their violet tones differ greatly, orchil being much the brightest, and also because ammonia has no effect on Campeachy, but turns orchil a bluish violet, especially if it be inclined to red.

Hydrochloric acid, dilute or concentrated, is without effect on alkanet purple. In a diluted state it has no effect on Perkins's violet or dahlia. In a concentrated form it turns the latter to blue or even green, if it be present in excess and much concentrated. Prolonged washing in water brings back the original violet shades. Dahlia gives a bluer shade than Perkins's violet.

The action of hydrochloric acid is equally well defined on night blue and methylanilines. They turn green at first and then yellow. Washing brings back first the green, and ultimately the original violet.

No. 2 group comprises garance violet, cochineal purple, and, as a composite colour, cochineal purple and carmine indigo. These three are thus distinguishable: Hydrochloric acid turns garance violet to a brownish or light brown shade, and gives the characteristic madder reactions before described. Cochineal purple is reddened by it. Sometimes it discolours, turning yellow without passing through the brown. The composite colour is recognized by a characteristic reaction. When boiled in a weak solution of carbonate of soda the liquor turns blue (with a greenish cast), whilst the material itself assumes a port-wine red shade.

BLUES.—Blue dyes arrange themselves in two groups: (1) those that potash leaves unaltered nearly or quite; (2) those that it bleaches or changes colour.

No. 1 group comprises Campeachy blue, ultramarine, indigo vat, Coupier's blue, azurine, cyanine, alizarine blue, and anthracine blue.

Campeachy blue is recognized by hydrochloric acid changing it to a fine red. Potash, without having very much effect browns it a little.

Ultramarine is deprived of its colour by hydrochloric as well as nitric acid. But it must be borne in mind that with the ultramarines employed in printing the glaze sometimes interferes with the action of the test. The material in these cases should be first washed with a little ether.

Vat blue is unaffected by hydrochloric acid, but nitric acid discolours it. On woollens a yellow tinge is produced, owing to the action of the nitric acid on the wool.

Coupier's blue is but very slightly altered by potash, which has a slight tendency to green it. It is distinguishable from vat blue by the fact that nitric acid does not destroy the colour, but simply changes it to a dark reddish black. Hydrochloric acid is equally without effect upon it.

Azurine is unchanged by the presence of potash. Hydro-

chloric acid turns this colour to green, and nitric acid to brown. After prolonged action, nitric acid removes the colour altogether, but this reaction is not to be confounded with the effect on indigo vat, where the discolouration is instantaneous.

Cyanine is discoloured by hydrochloric acid; washing in water brings back the blue shade. Potash has no effect upon it. The reactions much resemble those afforded by aniline blues, with the difference that with aniline blues potash is the active reagent, whereas with cyanine it is the hydrochloric acid, potash, as we have seen, having no effect. Protochloride of tin produces the same effect as hydrochloric acid.

Alizarine blue takes a rich garnet or purple shade with hydrochloric acid, discharging a fine red. The change of shade might be confounded with that in Campeachy blue, but the latter gives a lighter and brighter red. Moreover, Campeachy blue, although but little affected by the potash, has a tendency to brown under its action, whereas the blue of alizarine remains unchanged. Patterns recently produced in this shade by a new process appear to be insensible to the action of acid.

No. 2 group comprises indigo carmine, the blues derived from ferro and ferricyanides, azuline, Lyons blue, and night blue.

Indigo carmine is recognized by potash bleaching the material completely, especially after washing with water. Tin salts likewise destroy the colour in a short time. Ammonia does not.

A characteristic reaction of the sulphur compounds of indigo is, that when the material is boiled in a weak solution of carbonate of soda, it loses its colour, the liquor becoming blue. With acid, this liquor will dye blue small woollen fragments. Materials dyed with blues derived from ferrocyanides or ferricyanides rust under the action of potash. An acid bath revives the blue colour; washing in water does not. The presence of the iron may be recognized by incineration of the stuff, or by reacting on the rust with a little acidulated ferrocyanide of potassium. Azuline, Lyons blue, and night blue give the characteristic reactions of aniline dyes, that is to say, potash discolours them altogether or changes them to a very pale dingy violet, and washing abundantly with water brings back the blue in all its pristine brilliancy. Hydrochloric acid has no effect beyond giving a slight greenish tinge to the blue.

GREENS.—Green dyes are distinguished by their behaviour in regard of potash in three groups: (1) those that turn brown or yellowish under its action; (2) those that are discoloured or turned grey thereby; (3) those upon which potash has no effect.

No. 1 group includes olive or sumach and certain composite greens, viz., that produced with picric acid and indigo carmine. The new green produced with picric acid and aniline blue, and Saxony green, obtained with turmeric and indigo sulphide.

These four are distinguished among themselves thus: olive or sumach green turns brown under the action of potash, and when the action is prolonged a light brown. With hydrochloric acid it turns brown likewise; with tin salts a brownish grey.

Spring green turns an orange-yellow with potash. Ammonia, on the contrary, has no effect upon it; neither has hydrochloric acid. Tin salts produce no effect upon it at first, but by prolonged action turn it yellow. This reaction is explained by remarking that the tin salts decompose the indigo carmine, leaving visible the yellow of the picric acid alone, upon which they exert no effect. Washing with water does not, of course, restore the green.

New green likewise turns an orange-yellow with a certain brownish cast under the action of potash. Ammonia reacts on it, turning it to yellow. Washing well with water revives the green. Hydrochloric acid turns it a bluish tint. Tin salts have no marked effect upon it.

Saxony green is turned to a reddish brown by potash. Ammonia likewise browns it. Concentrated hydrochloric acid turns it brown; and tin salts cause it to pass into a dirty green with a brownish cast, and afterwards into a fine orange-red, which is explained by the progressive action of the salts on the constituents of the colour.

No. 2 group comprises aniline green, methylaniline green, malachite green, acid green, and Schweinfurth's green. The following reactions distinguish these colours among themselves and others.

* Essay awarded a *Silver Medal* by the Industrial Society of Amiens.

Materials dyed with aniline green (iodine green), methyl-aniline green, and acid greens are all discoloured by the action of potash; washing freely with water restores the green again. When, however, the original shade is pale, the green revives with difficulty or not at all. Hydrochloric acid likewise destroys and washing restores the original green. These reactions not unfrequently leave behind them a brownish tinge, especially when, as often happens, picric acid has been added to the dye. Ammonia discolours them likewise.

Malachite green is distinguished from aniline (iodine) green by the shade inclining less to blue. Schweinfurth's green becomes a bluish grey with potash; hydrochloric acid turns it yellow. Ammonia produces that fine blue that copper salts gives with an excess of ammonia, and which is quite characteristic.

No. 3 group comprises chrome green, emeraldine, and dragon green, produced with indigo vat and woad. Chrome greens are known by their indifference to all reagents. In the ashes of the material chrome will be found. Emeraldine turns bluish black with potash; nitric acid turns it brown. Dragon green is not changed by potash, but nitric acid turns it a sort of tawny brown. This is explained by the indigo being destroyed by the action of the acid, leaving the woad, the yellow shade of which is turned to orange thereby.

The Ramie Fibre.



IN some of our previous issues we have given articles on the value of the Ramie plant when used as a textile, which have resulted in many inquiries from manufacturers of different classes of fabrics. These have been answered mostly by correspondence, and to supplement these replies we give an extract from "La Ramie" on the progress of the plant during the year 1882, which runs as follows:—

If there be any question as to the actual value of the Ramie, either in its cultivation or the manufacture of its textiles, the points may be considered as well and satisfactorily settled by the extended production and use in France and other European countries during the past year. The year did not pass without attention to the progress of this new fibre, and the confirmation of reports of facts concerning it. It made greater advances in 1882 than it had made during the previous fifteen years of most meritorious trial and frequently fruitless efforts. The time has not yet arrived when we should explain the causes of drawbacks. The success has been sufficient to satisfy all of the large use that will be made of the Ramie in the near future, and to establish the certainty of progress throughout the world. In regarding the present status it is of much moment to know that the Ramie, which was unknown yesterday, to-day is familiar to every one. We prove this by showing that though of only recent introduction the question of its cultivation and utilization now agitates all countries. News reaches us every day that not only are the people of Europe studying its usefulness and adaptation to modern industries, but that the same feeling extends to Africa, Asia and America. In all the agricultural and manufacturing countries associations are forming for its culture and use; new forms and new textiles are now introduced. Previous to 1882, China and the neighbouring islands alone produced Ramie in appreciable quantities. Upon our Continent, particularly in France, then in Algiers and in Egypt, plantations were started. We stated the extent of these efforts, but the efforts were neglected, and the importance of the new fibre under-rated. Its real value was yet to be discovered. During the past year, however, a new light has been spread abroad; and we have largely assisted in aiding the increasing desire for information regarding Ramie. Now, everywhere large plantations have been started for cultivation. In France, where only a few patches of land had been used for curiosities of culture, they have now millions of the plant growing vigorously. The Southern departments have been fairly covered with Ramie fields, and we can scarcely record the noted progress and the satisfaction expressed by all engaged in the culture. In Portugal, where there had not been one plant, there are now a million. Spain and Italy have started Ramie nurseries, which

are now grandly flourishing. Algiers and Egypt have enlarged their plantations. Agricultural associations have been formed in Java, in our colonies and in America, and preparations are being made for planting during the present year. In accordance with the textile development, the culture has progressed, and is still progressing. Previous to 1880 there were in Europe only two small spinning factories, and the product encountered the China grass in the London market. To-day these factories have enlarged, and others have been started in France and other countries. There are now eight large factories. Some time since we announced the establishment of a factory at Rheims, and we now learn that Mr. Feray has started a large Ramie spinnery at Esonnes. The numerous applications of Ramie yarns which were unknown until recently, have convinced, by a mass of trials, the most sceptic, who are now fully assured of its worth, as it is used in nearly all branches of textile manufacture. The linen and damask manufacturers, the makers of passementerie, the hosiery people, and the woollen plush, carpet and furniture classes, have all produced articles of approved excellence and much needed; all this, notwithstanding the high prices demanded for the material. Every manufacturer is now anxious to introduce the Ramie in his specialty, whatever that may be. Applications already made have sufficiently proved the real, unmistakable value of the fibre. Where large stocks of new Ramie can be had they are used; and the improvements in spinning have aided the formation of new textiles that will take their place in the first rank of manufacture. It should be enough to have predicted the large improvement that the year has seen. In all the textile industries a long-felt want has been supplied; manufacturers have been awakened and a protective revolution inaugurated. We may add that the phenomenon we now present is not new. If we examine the histories of textile fibres, many of which are now so cheap, we shall find that their introduction caused delay, trial and vexation. Especially was it so with flax and cotton. Early introduction has always been retarded by opposing obstructionists, but energy has been awakened and the zeal of an irresistible force has at last prevailed. The cotton required the genius of Whitney to take from it the mass of seed—the flax the looms of Philippe de Girard. The Ramie, till now, lacked the principle of mechanical decortication. The proper treatment of the green stalks of the Ramie had been long sought, and until now the same search has continued. More than thirty machines have been constructed, and one after another has appeared during the last fifteen years. We have been silent regarding these wrongly-directed inventions, and the small ripple they attained in the industrial world, form an irrefutable proof of their impotence. A simple change of tactics, by means of certain mechanical treatment of the *dried* stalks, has made more noise and produced more effect in one month than all these contrivances in fifteen years. The increased and extensive culture now prominent, and the development of industrial usefulness, have proved what we designed they should. We have every reason to congratulate the users of Ramie upon the appearance of the machine invented by Favier, of Ville-franche; and to this invention the year 1882 may be known as the apogee of the veritable creation of the Ramie industry.

The American Tariff.

The conference Committee on the Tariff Bill has been finally constituted. It consists of eight extreme protectionists, one moderate protectionist, and one revenue reformer. We understand the average reduction in cotton goods is one-third, except for fine hosiery. Laces, embroideries, curtains, and velvets are increased over one-third. Woollen goods and manufactures are reduced on an average to 35 per cent. *ad valorem*. The reduction on carpets is one-third of the present rate. As compared with the Senate Bill, all the changes are increases. Great disappointment is expressed at Bradford, amongst merchants and manufacturers with the New Tariff. Despatches have been received by some houses, from New York Agents, stating that in low worsted goods there is an addition of four cents, or rather more than 2d. per yard, which is a practically prohibitive duty, and must affect very materially the worsted industry, but as the New Tariff does not come into operation till July 1st, the Bradford merchants expect to be busy in the interval with orders for the States. With regard to the all wool stuffs, such as the better kind of cashmeres, &c., which are made chiefly in France, though partly in Bradford district, there is also an addition to tariff of five cents per yard. The seriousness of this additional duty may be gathered from the fact that on some pieces the increased duty will amount to 10s. Most of French goods too are shipped through Bradford houses, and the outlook for the future in American trade is unfavourable.



The New Bankruptcy Bill.



THE following summary of the main provisions of the New Bankruptcy Bill, have been given by the *Times* in its leading columns. The bill which with some slight alterations and amendments, is likely to become law this session, has been in the hands of the President of the Board of Trade, the Lord Chancellor, and one of the Law Officers:—

"The first characteristic of the new measure will be the attempt made therein to do away with the facilities—unknown to any law but our own—now offered by sections 125 and 126, relating to liquidation by arrangement and compositions for debtors to cast off their liabilities with ease and without public exposure. The worst incidents of the present system—the absence of a public examination on oath, the extraordinary power of the statutory majority, obtained often by improper means, and sometimes acting collusively, and the position of practicable independence of the trustee—will cease to exist. The bill will clearly recognize that the public has, apart from the creditors, a strong interest in seeing that the estates are wound up in a proper manner, and that fraudulent or reckless traders are not screened from publicity. In other words, sections 125 and 126 will be repealed; a public examination of the bankrupt as to his conduct, dealings, and property will be obligatory in all cases, and cannot be avoided by artifices on the part either of the debtor or his creditors; and the sanction of the Court, which will be granted only after having had a report by the official receiver, to schemes of composition will not be an empty form.

"Another principle which the bill recognizes is that creditors who are entitled to have their debtor's estate distributed among them cannot be expected to give that minute attention to details which is required if economy is to be observed, and that it is essential they should receive more assistance than they now get. This is to be given through the medium of official receivers, particularly in the case of small estates, which at present are treated as waifs, or left to be scrambled for by professional trustees.

"Perhaps of the greatest consequence is the public examination on oath, which will be universal. Insolvency is not, indeed, to be treated as a crime. We cannot revert to that primitive view of it. But under the new measure it will be regarded as an event which calls for explanation; and it will not be possible for creditors, friendly and somewhat dubiously *bonâ fide*, or for enterprising solicitors to prevent a bankrupt from being examined as to the causes which have led to the disaster. In short, the bankrupt will be treated very much as a captain who has lost his ship, and who is bound to justify himself before the Wreck Commissioner. One of the worst features of the present system is that traders who get into difficulties are tempted to go on struggling against terrible odds, and do not give up the fight and consult their creditors until their assets are wasted. No law will ever effectually prevent this mistake, which has its root in human nature; but by permitting the debtor as well as his creditors to present a bankruptcy petition—which will be the commencement of all proceedings—something will be done to prevent estates proving so often miserable trifles.

"It will be a marked feature of the Bill that the Court will keep a firm hold over the discharge of the bankrupt, that it will not be the mechanical process which it now is, but will depend much on the report of the official receiver, and that the Court will be able to annul an adjudication, and thus to mark its sense of the blamelessness of a debtor who has come to misfortune, not by reckless trading, but altogether by unforeseen calamities.

"We have enumerated most of the chief features of the measure. But mention must also be made of the elaborate provisions for giving the creditors control and possession of the estates at the earliest possible date, for preventing retention by

trustees of large sums which they at present may treat as their own, for establishing an effectual system of audit, and for remunerating trustees in a rational way. The bills of solicitors, auctioneers, and others, which are now often paid, however exorbitant, will be taxed; the present ineffective provisions for this will be strengthened. It will be found also that in framing the Bill notice has been taken of the suggestions made recently by the London Chamber of Commerce, with a view to secure the appointment of fit and proper trustees."

Wholesale at Less than Cost.

A contemporary was, a short time ago, complaining that the trade which it represented suffered greatly from the practice which many firms had (for various reasons) of selling goods, at less than cost price. The remarks might in many instances be applied to the various branches of the Textile trades. The publication in question said:—"Leaving the primary causes of this evil, which may be attributed to the unhealthy condition of the trade, the secondary causes may be put down as three in number, poverty, ignorance—in a trade sense—and dishonesty."

The manufacturer who undersells from the first of these causes cannot, as a rule, help himself. His intentions are usually entirely pure. He has embarked his all in the trade, withdraw he cannot, and many people are depending upon his providing wages and salaries for Saturday. Beyond this again, there are his monthly accounts to be met, or his business must stop; consequently, money has to be continually got in, and this is obtained sometimes from buyers, who systematically work such a class of trade in the full knowledge that the goods they purchase represent more than the value which is given for them—sometimes from regular purchasers, who are induced by extra concessions to stock goods for which they have no present requirement.

The number who undersell from pure ignorance of what they are doing is larger than is generally imagined. Costing is a process they have not mastered, and there are items of expenditure incurred in production, small in themselves, but which tell up to an extent they do not dream of. The wholesale buyer is apt to dwell on the advantages he obtains in purchasing of Mr. Somebody Else, and brings forward invoices to bear out his statements. Without knowing the circumstances under which these transactions have been couched, the manufacturer assumes that he is being beaten out of his market—that if Mr. Somebody Else can afford to sell goods at a price he can also, and so the difficulty of obtaining legitimate prices is enhanced to others.

In no insignificant proportion of cases of underselling deliberate dishonesty must be taken as the motive. Instances will occur to the mind of almost every reader who has an acquaintance with the wholesale trade, where sales have been made—and they are made daily—of goods at prices which do not represent the cost of the materials they are composed of. It must not be considered that these are exceptional sales of accumulated stock; on the contrary, the larger proportion are duly made to order, with the proviso that cash shall be paid on delivery. The buyer knows well the reasons of such sales and what the sequel is to be, but gives himself no uneasiness as to the moral guilt which attaches to his share in the fraudulent proceedings which are going forward. It is enough for him that there is no guilt in the eyes of the law.

The manufacturer who works upon a commercially sound system suffers seriously from underselling. The existence of such a practice has a tendency to create false ideas of value on the part of buyers, and makes it a work of extreme difficulty for him to obtain orders at a legitimately paying price. Of course, the buyer above alluded to is enriched by its continuance, but he is the only person who is in any way benefited, unless we except the class whose business is connected with the Bankruptcy Court, where the play always ends.

In such a matter it is easy to state cause and effect: the remedy is not easy to find. To look to Parliament seems futile, and for internal reform almost equally so. We can only hope that with this practice it may not be as with the poor, who, we are Scripturally told, will be always with us.



ORIGINAL DESIGNS.

On our first plate we figure a design for a Lace Curtain, which will be seen to possess great merit for this class of Fabrics. This design has been drawn by Mr. Irvine Field, of Cringles, Oakenshaw, near Bradford.

* * * *

Our second design is intended for a Linen Table Cover for which it is specially suitable. It will however be found of service as an Alhambra Quilt. It has been designed by Mr. A. Garlick, 20, Ellesmere Place, Longsight, Manchester.

* * * *

Our third design has been carefully drawn for Embossed Plush, by Mr. R. Lord, 3, Gerrard Street, Halifax.

* * * *

We beg to inform Manufacturers and Designers of all classes of Textile Fabrics that we can now furnish the Designs, which have been issued in the back numbers of this Journal, bound in a neat cover. We have had 500 sets of these reprinted, for a part of which orders have been already taken. The Designs are specially adapted for Carpets, Tapestries, Table Covers, Damasks, Cretonnes, Muslins, Laces, Embossed Velvets, Linens, Quilts, Toilet Covers, Calico Prints, Silks, Stuffs, Felts, Curtains, Figured Braids, and a variety of other Fabrics. We shall be pleased to forward copies carriage paid) on receipt of 10s. 6d. each to any part of the United Kingdom, and for 11s. to any country abroad.

* * * *

** We beg to inform manufacturers and others that adaptations of designs, published in the "Journal of Fabrics and Textile Industries," can be made at the Office by experienced Designers, and that Original Designs can also be furnished at moderate charges.



MONTHLY TRADE REPORTS.

Wool.—The first series of sales of Colonial wool opened in London on the 20th ult., and a large number of buyers attended. On the whole the biddings have been made with spirit, and the average of prices has risen slightly. The rates realized have been equal to those of February 1882. The present sales close about the 20th instant. In Liverpool the sales of wool have not been of an encouraging nature, as the branches dependent on the class usually sold at that port, have not been particularly active. In the Scotch districts the trade has been on a par with our last report, and in Bradford and Halifax the month commenced with a very quiet feeling in the market, with a disposition to lower values. The spirited biddings at the London sales, however, gave a better tone, and a slightly improved feeling now characterises the trade, although the quantity of wool changing hands is not large. In Leeds and Huddersfield a fair business has been passing, to which a firm tone has been given by the Colonial sales. In the Yarn and Piece branches only a moderate business has taken place, and this of a "hand to mouth" character. A slightly better feeling prevails, and prices keep tolerably firm.

Cotton.—At the commencement of the month a fair trade was done in sales of raw material, this continued until the second week, when the demand slackened, since which time only a moderate business has been passing. Prices have fluctuated

according to the demand for different classes. In nearly all departments of the manufactured article the demand has been of an indifferent nature, and a consequent instability in prices prevails, contracts in the hands of manufacturers have, on the whole, been reduced, and many of them are now making to stock. In a few departments, especially the dhooti and jaconet branches, a fair business is still passing, and also in yarns of fine counts made from Egyptian cotton. The business in yarns for home account has fallen off to a great extent, and prices have a rather downward tendency.

Woollen.—In the woollen districts the trade during the first two weeks of the month was of a restricted nature, especially in the branch devoted to the low classes of goods. In the better classes of worsted coatings a fair demand was experienced. Towards the latter part of the month an improvement took place, and a fair spring demand is now being experienced, especially for the finer makes of worsted and fancy cloths. Prices for the latter makes have kept very firm, but for the lower qualities of goods a slightly weakening tendency has been observed. In the heavy woollen districts trade has not been particularly good, but still a hopeful feeling pervades the market, and prices keep tolerably firm.

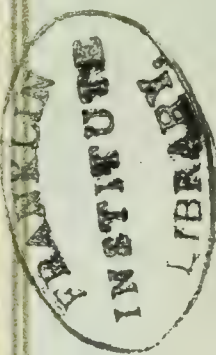
Linen.—In the linen trades a fair amount of business has been done although there is considerable room for improvement. In the raw material prices have had a hardening tendency, whilst the rates procurable for the manufactured article have hardly kept pace with it. In the jute trades a fairly active demand is still experienced, in fact this branch of the business may be said to be in a highly satisfactory condition. The manufactured goods are passing from the market as produced at fairly remunerative prices, and there is a tendency to ask higher rates. The outlook abroad is particularly bright.

Lace.—The lace trade has not improved in any sensible degree during the month, a slight improvement has been felt in some branches, but not to any noticeable extent. In the curtain branch, business has been of a dragging nature, and stocks, on the whole are beginning to accumulate, although such as are of good design meet with a fair sale. In the cotton plain departments an improvement has been felt, and a hopeful feeling pervades this branch. Nearly all kinds of silk goods have been flat. Prices, on the whole, show a firm front, but in some departments a weakening tendency has been observable.

Carpets.—There has been little in the carpet trade during the month of any interest. The same apathy we have chronicled during the past three months still exists in nearly all departments. The demand has slightly improved, and the number of orders given out has been larger, but still the business done is at very unremunerative rates. In the Brussels branch manufacturers are fairly busy, but in the other branches inactivity is the rule. Business in worsted yarns is quiet, but yet prices keep firm, and have even a hardening tendency, which makes it a more difficult task for the manufacturer to produce goods at a saleable price.

A New Alloy.

It has long been known that the introduction of iron into alloys of copper and zinc materially alters the physical properties of the products for the better. Several attempts have been made to use iron in this connection, but hitherto without practical success. Experimentally the results have proved satisfactory, but when tried on a working scale the process has failed from a want of uniformity in the products. Among others who have directed their attention to the matter is Mr. Alexander Dick, of 110, Cannon Street, London, who, after careful experiment and research, has succeeded in introducing the iron into the alloy in such a way as to give good results on a practical scale. This success is obtained by previously alloying the iron in such a manner that it is combined in definite and known proportions with the zinc. When ordinary wrought iron is introduced into molten zinc the latter readily dissolves or absorbs the former. The exact point of saturation or the proportion dissolved or absorbed varies with the temperature at which the molten zinc is maintained during the process; and it is by carefully ascertaining and controlling this temperature that Mr. Dick has been able to succeed in obtaining a perfectly uniform product. The metal thus produced, and to which the name of Delta metal has been given, is stated to be as much superior to brass as phosphor bronze is to gun metal or as steel is to iron. It has an excellent colour, is very easily worked, takes a high polish, and tarnishes less quickly than brass, and on the whole appears to be susceptible of a very wide application both for useful and ornamental purposes.



LACE CURTAIN.



LINEN TABLE COVER.

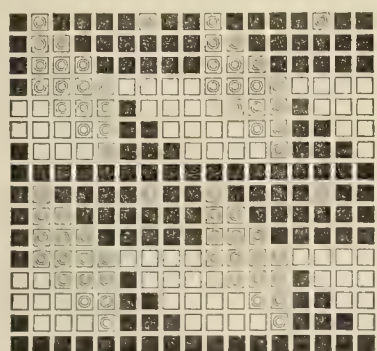


EMBOSSÉD PLUSH

ORIGINAL DESIGNS.

Worsted Overcoatings.

No. 40.

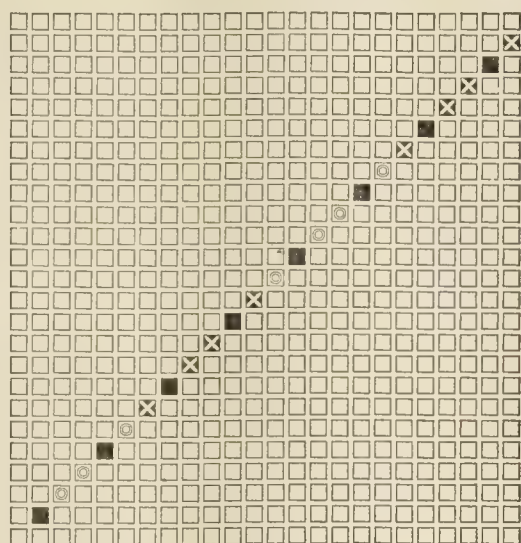


Design.

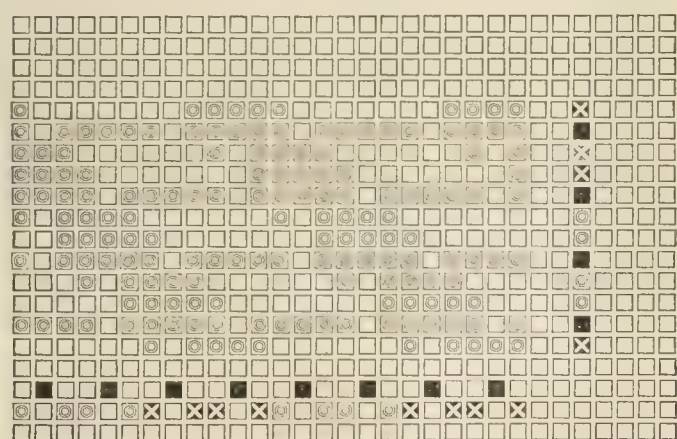
Black Worsted marked \times

Brown Worsted do. \square

Black Backing do. \blacksquare



Draft.



Pegging Plan.

The backing must always be thrown into the shed marked \blacksquare in the Pegging Plan.

Warp : 1 thread Black Worsted face.
 1 „ Black Woollen backing.
 2 „ Black Worsted face.
 1 „ Black Woollen backing.
 1 „ Black Worsted face.
 1 „ Brown Worsted face.
 1 „ Black Woollen backing.
 2 „ Brown Worsted face.
 1 „ Black Woollen backing.
 1 „ Brown Worsted face.

12

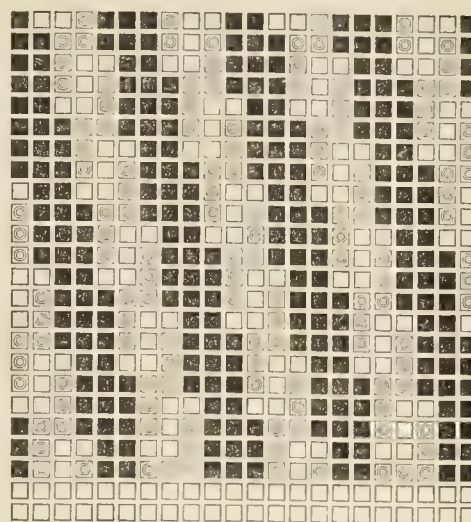
Warp Yarns : Black Worsted 48's 2-fold, 13,440 yds. in a lb.
 Brown Worsted do. do. do.
 Black Woollen, 18 skeins or 4,608 do.

Weft : Worsted face same as Warp.
 Black Woollen backing, 12 skeins or 3,072 yds. per lb.
 1 pick Backing. Also Olive Worsted instead
 2 „ Brown Worsted face. of Brown.
 1 „ Backing. Also face weft all Black
 2 „ Brown Worsted face. Worsted.
 1 „ Backing. All Olive Worsted face with
 2 „ Black Worsted face. Black backing.
 1 „ Backing. All Brown Worsted face
 2 „ Black Worsted face. with Black Backing.

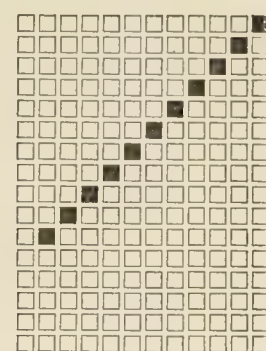
12

Reed 14 : 6 threads in a dent.
 82 picks per inch.
 70 inches wide in loom.
 56 inches wide when finished.
 Clear finish.

No. 41.

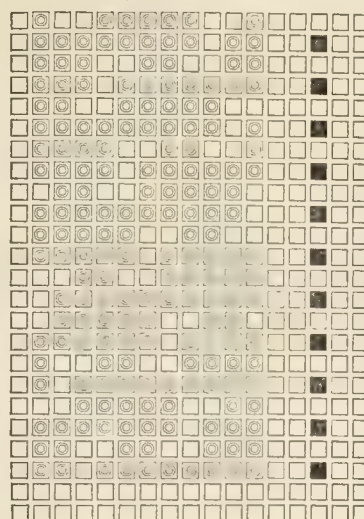


Design.



Draft.

Warp : All Black Worsted,
 48's 2-fold or 13,440
 yds. in a lb.
 4,900 threads in the warp.



Pegging Plan.

Weft:

1 pick Black Worsted, 48's 2-fold
 face.
 1 „ Black Woollen, 3,072 yds.
 per lb. for backing.
 2

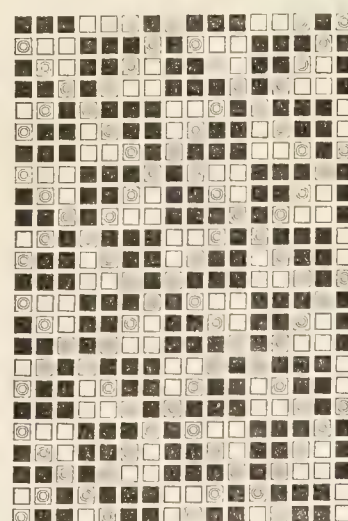
The backing pick must always be
 thrown into the shed marked \blacksquare in
 Pegging Plan.

Reed 14 : 5 threads in a dent.
 108 picks per inch.
 70 inches wide in the loom.
 56 inches wide when finished.
 Clear finish.

This would also do to be made in the grey and dyed in the
 piece say Dark Blue, Dark Olive, Dark Brown, &c.

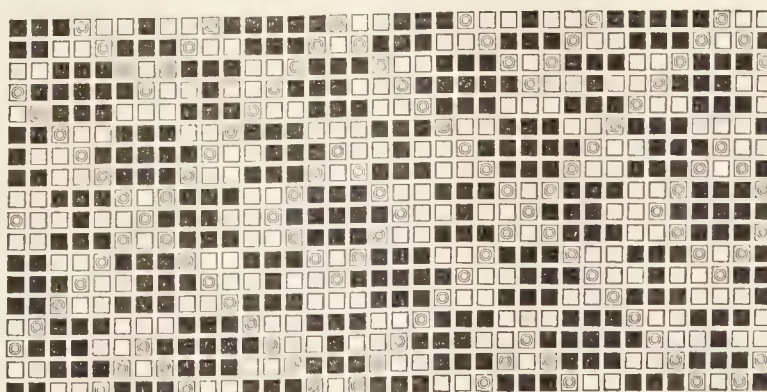
Coatings.

42.



Design.

43.

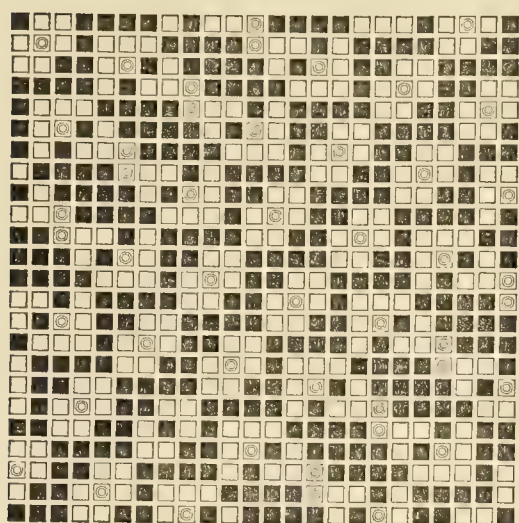


Design.


No. 42 is an 8-end pattern. It
 may be woven with either a
 a Woollen or Cotton back.

No. 43 is
 an 18-end
 pattern,
 and it may
 also be
 woven with
 either a
 Woollen
 or Cotton
 back.

44.

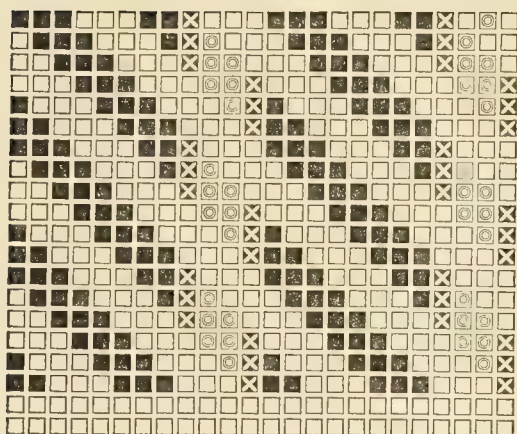


Design.

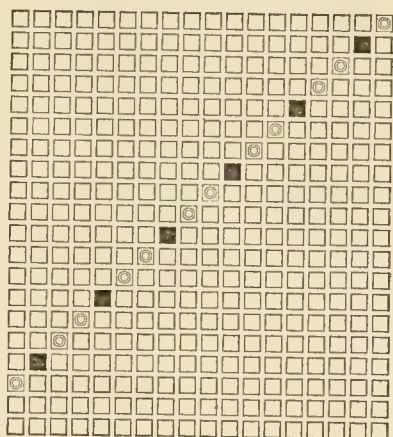
No. 44 is a 24-end Diagonal pattern, and as it will not draft with less than 24 shafts, should be woven with the jacquard. It will make a good cloth with either a Woollen or Cotton back. Each pick in Designs Nos. 42, 43, and 44 represents 2 picks in weaving. In cutting the cards for all three patterns, cut the white squares and those marked  the first time, and the remainder at the second cutting.

Worsted Trouserings.

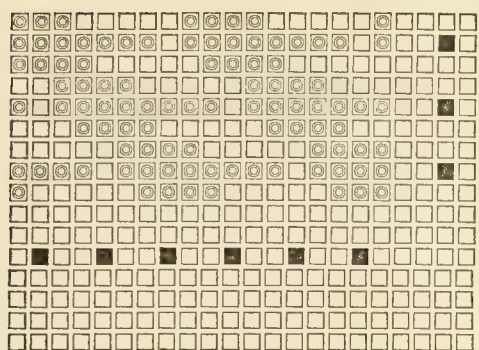
No. 45.




Design.




Draft.



Pegging Plan.

Backing pick must be thrown in the sheds marked .

Backing warp always on the shaft marked .

Begin the draft with 1 end Black and Crimson Twist and follow on as marked in warp ticket below.

Warp ; 1 end Black and Crimson Twist.
 1 „ Black Woollen backing.
 2 „ Sage Green Worsted.
 1 „ Black Woollen backing.
 1 „ Black and Crimson Twist.
 1 „ Black Worsted.
 1 „ Black Woollen.
 2 „ Black Worsted.
 1 „ Black Woollen.
 2 „ Black Worsted.
 1 „ Black Woollen.
 2 „ Black Worsted.
 1 „ Black Woollen.
 1 „ Black Worsted.

18

Warp Yarns :

1 Black Worsted 60's 2-fold,	} Twisted 22 turns per inch, or 8,400 yards in a lb. when twisted together.
16,800 yds.	
1 Crimson Worsted 60's 2-fold	}
16,800 yds.	
Sage Green Worsted 48's 2-fold	13,440 yds.
Black Worsted 48's 2-fold	13,440 yds.
Black Woollen backing, 18 skeins or 4,608 yds. in a lb.	

West : Worsted face 48's 2-fold or 13,440 yds. in a lb.

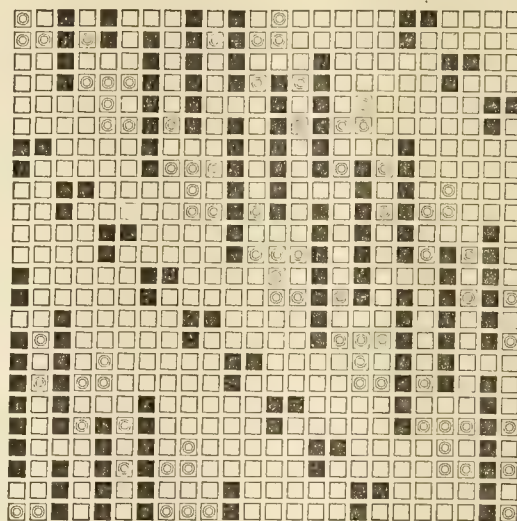
Woollen backing Black single, 10 skeins or 2,560 yds. in a lb.

1 pick Black backing.	Also Brown Worsted face.
2 „ Black Worsted face.	„ Sage Green do.
3	„ Dark Olive do.

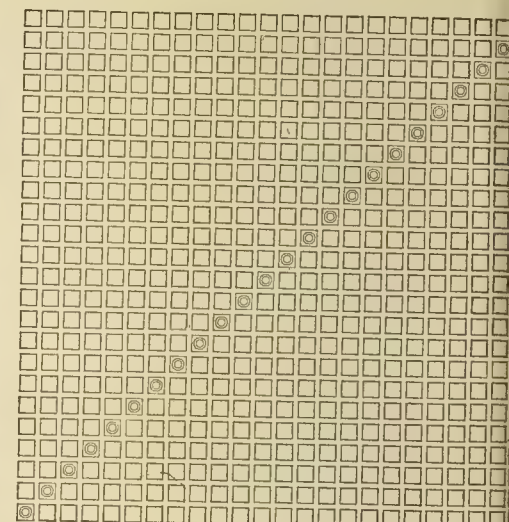
Reed 14 : 6 threads in a dent.
 82 picks per inch.
 35 inches wide in loom.
 28 inches wide when finished.
 Clear finish.

Woollen Trouserings.

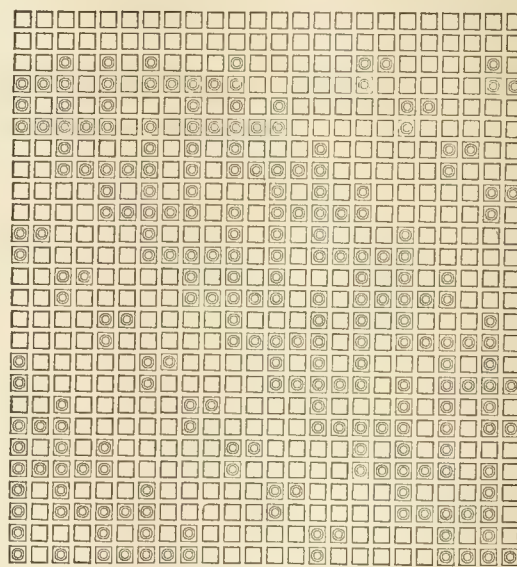
No. 46.



Design.



Draft.



Pegging Plan.

Warp :

All Light Brown, 18 skeins.
 Single warp, or 4,680 yds. in a lb.

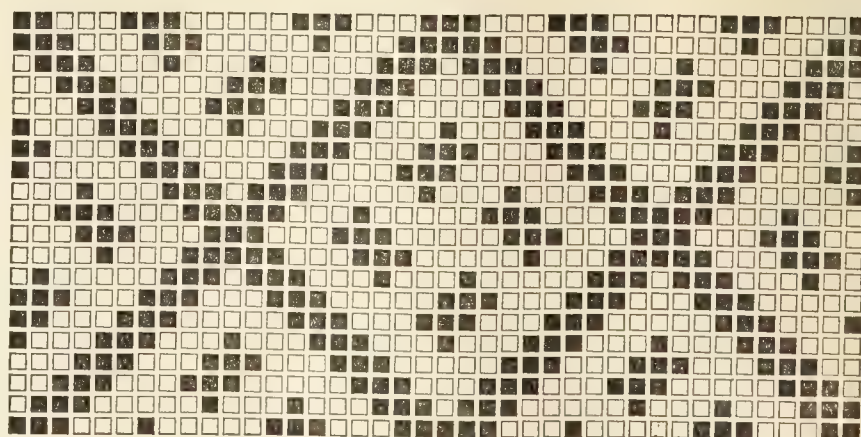
West :

All Black single, 15 skeins or 3,840 yds. in a lb.
 All Dark Olive do. do. do.
 All Dark Green do. do. do.
 All Dark Blue do. do. do.
 6 picks Black & 6 picks Sea Green
 6 „ „ 6 „ Mid. Blue
 6 „ „ 6 „ Lavender.

Reed 16 : 4 threads in a dent.
 60 picks per inch.
 35 inches wide in loom.
 28 inches wide when finished.
 Clear finish.

Ground Effect for Stuff Goods.

No. 47.



Design.



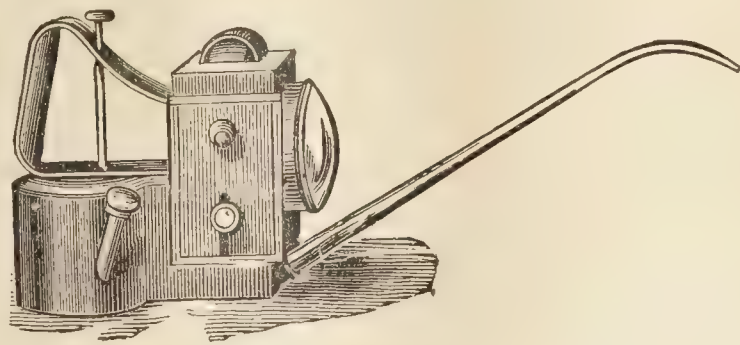
MACHINERY, TOOLS, &c.

The Manufactures of Messrs. Sutcliffe Bros., Stanley Works, Godley, near Manchester.

We have often had inquiries (especially from country manufacturers) concerning the specialities required in their respective factories. We, therefore, draw the attention of our readers to those manufactured by Messrs. Sutcliffe Bros., Stanley Works, Godley, near Manchester. Their "Climax" Wheel Grease is suitable to all kinds of mill machinery. Its claims are its freeness from acid, resin and grit; it does not clog in the machinery; is always moist; and in use it wears itself quite away; is of greater service than oil or tallow, and by its use a great saving is effected. It is guaranteed pure, always uniform, and but of one quality. This firm are also agents for Bliven's Lubricating Cream, which is supplied to machinery by means of special cups adapted for the purpose, and which only allow of the feeding operation when the machinery is in motion. It has stood innumerable tests, by thoroughly practical firms, of its efficiency. It requires no attention, causes no dirt to accumulate, makes no waste, keeps bearings cool, and is perfect in lubrication. The proprietors of this cream will be happy to furnish, to any good firm, a sufficient quantity, gratis, to enable them to judge of its efficiency as a lubricating power, and of economy in its use, than which no stronger proof can be given of its valuable properties. Messrs. Sutcliffe Bros. supply the "Climax" Cotton Belting, for which they claim strength, durability and cheapness unsurpassed. It is made in any desired width and strength for driving the smallest pulley, or for use as a main driving belt. They guarantee it to run straight, to have a uniformly even surface, and to be equally strong throughout; it has no cross-joints, is unaffected by damp, and clings well to the pulley. It is adapted for in or out-door work, and may be used in all mills, dye-works, &c. This firm also manufacture the Patent Telluric Cement, for the covering of boilers, pipings, cylinders, &c. They guarantee that by the use of this cement, a saving of 20 to 40 per cent. in fuel is effected, that a quicker production and a steadier supply of steam is ensured. It is impervious to weather, inodorous, and instantly shows any leakage. It obviates rust and decay, and unequal expansion and contraction. It prevents radiation of heat and condensation. As to economy, the first cost of putting on the cement is saved in a few months, and it is warranted to wear as great a length of time as the boiler, &c., it may be fixed upon. Perhaps the best proof as to the value of the above-named specialities would be to give a few of the testimonials which have been handed to Messrs. Sutcliffe Bros., and copies of which have been passed to us, but as the space at our disposal forbids this, we may say that they are of a high order of merit, and may add that the list of firms now before us, to which they are continually supplying their goods, indicates that they are worthy of the patronage of all interested in this class of manufacture.

An Improved Oil-Can.

An improved oil-can—being a combination of an oil-can and lamp—an illustration of which is given below is at present being manufactured in the



United States, under the name of "The Excelsior Illuminating Oiler." A difficulty is often experienced in properly oiling portions of machinery to which daylight has little access. With this simple but ingenious "oiler" the difficulty is in a great measure overcome, as a ray of light is cast by the lamp—which will be seen is fixed at the front of the oil-can—on the exact place where the oil is being poured on the machinery from the can. We have no doubt that the contrivance will be a welcome addition to the already large stock of small inventions.

To Render Textile Materials Incombustible.

At one of their recent meetings, the Société d'Encouragement de l'Industrie accorded to M. Abel Martin a premium of 1,000 francs for his method of rendering textile fabrics, &c., incombustible. The following are the preparations used.

For light coloured materials; Sulphate of ammonia (pure), 8; carbonate of ammonia (pure), $2\frac{1}{2}$; boracic acid, 3; borax (pure), 2; starch, 2; and water, 100 kilogrammes. The solution was applied at a temperature of 30 deg. C., the materials being saturated several times with it. The liquid costs less than 1½d per litre.

For painted curtains, Sal ammoniac, 15; boracic acid, 5; soaked glue, 5; gelatine, $1\frac{1}{2}$; water, 100 kilogrammes, with sufficient lime. This mixture must be kept at a temperature of 60 deg. to 80 deg. C., until it assumes the consistency of oil, when it is applied with a brush.

For coarse curtains, cords or ropes, 15 kilogrammes of sal ammoniac, 6 of boracic acid, 3 of borax, and 100 kilogrammes of ordinary water are taken. The mixture is kept at a temperature of 100 deg. C. for from fifteen to twenty minutes. This liquid costs about 2d. per litre.

For paper of every description, the following ingredients are taken: Sulphate of ammonia, 8; boracic acid, 6; borax, 2; and ordinary water, 100 kilogrammes. This mixture is heated up to 59 deg. C., and costs 1½d. per litre.

Fashionable Fabrics.



PERHAPS prints never were so cheap as at present, as really nice-looking goods are to be had in plenty in black and other grounds, with chintz figures, at 3½d. per yard. Drapers put these at their doors sometimes, marked up 3¾d. as a leading article, and succeed occasionally in selling a good many. About 6d. used to be considered a fair price for a 9-8 print possessing anything like character or style of its own some years ago, and this variation in prices makes all the difference in effecting sales. In old times such goods as Hoyle's and Ashton's lilacs were generally expected to be the first to move, and although they possessed a certain distinctive character which mainly caused them to be in request by servants and working women, no comparison can be made betwixt any of the old goods and the modern ones obtainable to-day, either in style or price, the advance that has been made by English printers in their art being very noteworthy, especially in low cloths.

Soft all-wool dress goods still continue to be in favour with the general public, many of these being of an entirely plain description, but there have been a great many fancy goods of one sort and another put upon the trade, many of which are of a novel character, and stand a good chance of selling with the others. There is much less disposition, however, to patronize extravagant styles in dress goods than once existed on the part of the public, notably as upon one occasion when a species of towelling was sold for a brief period amongst even a superior class of customers as a dress novelty.

In fancy broad silks there appear to be fewer shown than were to be seen at this time last year, when an improvement in this branch was confidently looked for, and silks, it was thought, stood a better chance of selling than they had done for some time previously. Probably the extra business done at the beginning of last year was due to the attempts made by different manufacturers to put fresh and novel fabrics upon the market, for many of these were used as trimmings, while others were adopted for millinery purposes; but the falling off in the autumn trade in silk goods appears in many instances to have had a discouraging effect upon many manufacturers, who have relaxed their endeavours in this way, and have made fewer efforts to resuscitate this branch than might have been reckoned upon.

In the fancy handkerchief departments a large assortment of different goods may now be seen, consisting of embroidered scarfs, brocaded scarfs, plain and fancy squares of various kinds, and the usual run of goods that have been commonly sold of late in this division, which have been of a very mixed character. In some years there has been a special run upon some particular thing, as China crape, embroidered scarfs, which a few years back sold by thousands, to the exclusion of almost all other kinds of fancy scarfs, and these seemed to have dropped out of favour altogether for a time; but this season in the richest qualities they appear to be taking again, and heavily-embroidered ends are getting appreciated by some consumers in this line. Soft silk squares are likely to be wanted in different qualities, and these have been prepared in a great variety of colourings to suit every taste. A taking article in this department can often be sold to a very large extent, and much larger returns are often made in such than people unacquainted with this branch of business are likely to suppose.—*The Warehouseman.*

Ancient Tapestry, Embroidery and Stuffs.

M. Chauchard et Cie, of Paris, have inaugurated of late a new department for the sale of ancient tapestry embroidery, and stuffs. The great peculiarity of this is that all objects contained therein are absolutely authentic, and that they have been most carefully restored, mended, and purged of all the dirt and dust of ages. This must recommend them to amateurs, who when they buy tapestry, &c., at old curiosity shop have often to expend many pounds in getting them into condition. The tapestry at the Louvre includes, besides the productions of the Gobelins, Aubusson, and Flanders, none of which are of greater antiquity than the middle of the 17th century, a collection of splendid Gothic tapestry, and a still larger one of the Renaissance period, besides an immense number of *verdures*, namely, the green tapestry representing trees and flowers, which is far less expensive than the others, and is in request for the hangings of our modern drawing rooms, dining rooms, &c., and against which mirrors and even pictures may be hung. Some of the specimens of Flanders tapestry illustrate the stories of the Bible, while battle pieces are generally reproduced in the earlier Gobelins and hunting scenes in the Renaissance and later tapestry of the 18th century. A very large portion of the embroidery has been procured from the convents and monasteries of France, Spain and Portugal, and therefore the subjects are mostly religious and floral: the priests' garments, altar cloths of the 16th and 17th centuries, were often worked with the most exquisite flowers in colours, which time has only partially faded, on backgrounds of cloth of gold and silver. Side by side with these are to be found beautiful pieces of Louis XV. and Louis XVI. brocade and damask. It is proposed to convert these pieces of embroidery into table-covers, sofa cushions, drapery for the mantelpiece, coverings for pianos, mats, &c., by framing them in plush or antique satin, manufactured for the purpose in delicate shades that will not prove to great a contrast and destroy the effect of the materials themselves. At the same time, although the Louvre has amassed an extraordinarily large collection, it is quite impossible that they should become to common, as the price will prevent them from growing very popular, in spite of the favour in which all objects of the kind are now held.

Ring Spinning versus Mule Spinning.

The advantages of the ring spinning machine as compared with the mule spinning and the flyer frame, were under discussion at the meeting of the Manchester Association of Employers, Foremen, and Draughtsmen a few days ago. The ring spinning system is largely in use in America, but hitherto, although several attempts have been made to introduce it in England, it has met with very little favour in the large cotton mills in Lancashire. The ring spinning machine was originally the invention of an engineer residing in Manchester, and practically the only difference between the flyer frame and the ring frame consists in dispensing with the flyer and substituting a ring in the lifting rail made to move for the filling of the bobbins. The drag or winding on is got from a piece of steel wire bent in a half circular form, and the ring is dragged round by the yarn passing through it on its way to the bobbins. Mr. W. H. Beastow, who read a paper on the subject, urged that stronger and more even yarn from the same roving and with the same twist could be obtained by the ring spinning machine than by the mule. Whilst loss from waste was almost obliterated, practically unskilled labour could be employed, and from 50 to 75 per cent. more spindles could be put in the same floor space. The production per spindle was 25 per cent. greater, whilst the cost of spinning was from 15 to 30 per cent. less. The ring spinning machine was also more simple in its construction, had fewer parts, and was less liable to get out of repair. From the various patents which were being taken out in connection with ring spinning machinery, it was evident it was exciting more attention and being more carefully studied than any other machine connected with cotton spinning, and in his opinion would prove to be the spinning machine of the future. In the discussion which followed it was evident that ring spinning is still disregarded with disfavour in the district, and Mr. John Nasmith, who is connected with one of the leading machine making firms in Lancashire, said they might be very sure there was some good reason why the Oldham spinners did not adopt the ring frame, because, although new mills were constantly being built, they were all constructed for mule spinning. The exigencies of our market necessitated a very large proportion of our manufactures going abroad in "cop," and this was one of the greatest disadvantages to the ring frame. Spinning on weft was right enough so long as the yarn was spun where it was woven, but when they began to export it their difficulties arose. Mr. Nasmith remarked that he had just returned from the United States, and he might assert, without boasting, that America, although difference of climate might no doubt have some effect, could not compare with Lancashire with regard to spinning.

Inland Revenue Stamp Duties.

The duties which have hitherto been denoted by adhesive Inland Revenue stamps of the value of 2d., 3d., 6d., 9d., 1s., and 2s. 6d., or by combinations of those stamps, are for the future to be denoted by postage stamps; one or more stamps, as may be necessary, to be used to make up the requisite amount; care being taken however, in every case, to cancel the stamps by writing the signature (or initials) and date across the stamps. Until a postage stamp of the value of 2s. 6d. shall have been provided, that amount of duty may be denoted either by the present Inland Revenue stamp at 2s. 6d., or by the necessary number of postage stamps at lower rates; and, although no more of the superseded adhesive Inland Revenue stamps will be supplied to post-masters for sale to the public, yet any such stamps which may already be in the possession of the public may continue to be used for the payment of Inland Revenue duties, and they may be used also in payment of postage. The documents for which postage stamps may in future be used are:—Agreements liable to a duty of 6d.; bills of exchange for payment of money on demand liable to the duty of 1d.; certified copies of or extracts from registers of births, &c. (duty 1d.); charter parties (duty 6d.); contract notes (duty 1d.); delivery orders (duty 1d.); lease, or tack, or agreement for the letting, for any definite term less than a year, of a dwelling-house, or part of a dwelling house, at a rent not exceeding the rate of £10 a-year (duty 1d.); of a furnished dwelling-house, or apartments, for any definite term less than a year (duties 6d., 1s., 1s. 6d., 2s., and 2s. 6d.); letters of renunciation (duty 1d.); notarial acts (duty 1s.); policies of insurance, not life or marine (duty 1d.); protests of bills of exchange or of promissory notes (duties 1d., 2d., 3d., 6d., 9d., and 1s.); proxies liable to the duty of 1d.; receipts (duty 1d.); transfers of shares in cost book mines (duty 6d.); voting papers (duty 1d.); warrants for goods (duty 3d.) Postage stamps cannot be used for inland bills payable otherwise than on demand, for promissory notes, for foreign bills, for law or other fees, nor for any documents other than those above enumerated.

ODDS AND ENDS.

We understand that the hon. secretary has received from the Board of Trade the usual certificate for the protection of inventions that may be exhibited at the Cork Exhibition.

In the week ending March 3rd, 1883, there were 268 bills of sale in England and Wales, a decrease of 816 over those of the corresponding period last year; and the failures gazetted numbered 239, a decrease of 7. The totals for portion of year to March 3rd, 1883, are bills of sale registered for England and Wales, 2,200, a decrease of 6,844; the failures gazetted numbered 1,991, an increase of 19.

From the *City Press* it appears that 14 companies have contributed in the aggregate the sum of £44,531 to the building fund of the City and Guilds of London Institute, for the advancement of technical education, while 24 companies have subscribed during the last five years to the general work of the institute sums amounting in the whole to £79,862 10s. The Corporation has contributed £4,000, and individual members of companies £205. To the preliminary expenses fund eight companies have contributed £1,160 5s.

The National Smoke Abatement Institution is making arrangements for opening a permanent exhibition in a central part of London in an extensive range of buildings, for the display of apparatus, fuels, and systems of heating, combining economy with the prevention of smoke, and the best methods of ventilating and lighting. The exhibition will be free to the public, and will include examples of all the most recent inventions and improved apparatus. A lecture-hall for the reading of papers, and instruction classes, will be provided; also testing-rooms under the supervision of experts for the purpose of continuing the series of tests and trials commenced in connection with the South Kensington and Manchester Smoke Abatement Exhibitions of 1882. Particulars may be obtained at the offices of the National Smoke Abatement Institution, 44, Berners-street, Oxford-street, London, W.

According to the official reports, there were in 1875 no less than 32,211 Bavarians employed in weaving cotton tissues alone, and even at the Vienna International Exhibition of 1873 it was already recognised that, putting aside Alsace and Lorraine, Bavaria possessed the most important factories of Germany. At Augsburg, the principal factory, that of Stadlbach, employs 475 workmen, 600 workwomen; its machines are armed with 110,948 spindles, consume 17,000 bales of cotton per annum, and produce an income of £260,000. With regard to the manufacture of woollens, Bavaria holds equally a high rank. In 1873 there were 1,340,190 sheep, of which 91,825 were Merinos, devoted to this industry. It comprises every branch, from the coarsest to the finest tissues. For indigo and soda, so necessary in these trades, the great factory of Ludwigshafen, though only founded in 1865, has been discerned the first prizes at the exhibitions of London, Paris, Moscow, Sydney, and Melbourne, without mentioning all the German competitions.

NOTICE TO ADVERTISERS.

Advertisements will be inserted at the following rates; (in all cases prepaid): *Twenty words, One Shilling; Sixpence* for each additional *Twelve words* or part of *Twelve*. The address being counted as part of the Advertisement.
Displayed Advertisements according to arrangement.

Partnership.

WANTED, a PARTNER, sleeping or otherwise, with £1,000 to £2,000, to join another in purchasing a Smallware Manufacturing concern. The business is an old one, thoroughly established, and doing with all the leading Houses in the trade.—Address in confidence, G. A. Robinson, Accountant, 10, St. James's Square, Manchester.

Works.

A MILL in GERMANY, in a large manufacturing district, adapted for manufacturing woollens, is to SELL at a very moderate price.—For particulars apply to L.X., 56, Post Office, Hamburg.

Machinery on Sale.

ON SALE, one WOOLLEN WARP-SCOURING MACHINE, and one Two-beer Twining Mill, by Leach, Bobbin Soaking and Woozing Machine, Winding-on Frame, three good Oil Cisterns, &c.—Apply James Tomlinson, Soho Mills, Rochdale.

ON SALE, two good WOOL TEAZERS, one by E. Leach and Sons, the other by Taylor, Woodsworth and Co.—Apply to the Manager, Royal George Mills, Greenfield Station, Huddersfield and Manchester line.

Book Notice.

RAILWAY RATES.—By JOSEPH HORROCKS.

John Heywood, Manchester and London.

This work, which treats of Railway Rates in all its bearings, is a book that should be perused by every class of tradesmen throughout the United Kingdom, and should undoubtedly be laid on the tables of newsrooms in all industrial centres. To the various bodies that watch the interests of tradesmen generally it should prove of enormous importance. The author has handled his subject in an able manner, furnishing to dealers in every class of merchandise, a fund of information in reference to the classification of goods and the anomalous charges made by railway companies for the carriage of the different descriptions sent by rail from one part of the country to another. The textile trades especially will welcome the work, as it contains much of interest to them. In addition to a number of tables of rates, which the author comments upon, the book contains a feasible scheme, which, if adopted by the railway companies, "would lead" says the author "to the publication, in a clear and cheap form, of railway rates—both the maximum rates which may be charged, and the actual rates which are being charged, terminals being taken into account also—to and from every station. Its adoption would necessitate the re-arrangement of the rates throughout the country, which would doubtless, be a considerable task, but it is not an impossible one, and a re-arrangement is needed."

THE GAZETTE.

Adjudication of Bankruptcy.

Goldschmidt G. and L. Goldschmidt, Old Change, London, mantle warehouseman.

Sequestrations.

M'Killop and Young, Glasgow, bleachers and finishers.
Smith and Pettigrew, Mauchline, wool spinners.

Liquidations by Arrangement or Composition.

Brawn J., 20, St. Paul's Churchyard, silk merchant and agent.
Iliffe W. J. 20, Newgate Street, London, table cover manufacturer.
Mallalieu W. and S. Mallalieu, Oldham, cotton spinners, &c.
Purchon J. and T. Purchon, East Street, Leeds, cloth fullers, &c.
Beaumont M., Providence Mills, Marsh, Huddersfield, York, serge manufacturer.
Charnock J., Bowling, Bradford, Yorks, worsted spinner, &c.
Marriner W. T., Well Street, London, linen and lace collar manufacturer.
Fairlamb Martha Elizabeth, Huddersfield, Yorks, woollen cloth merchant.
Gomersal S. and J. Shepherd, Morley, Yorks, woollen manufacturers.
Morris J. and D. Jones, Llangollen, Denbigh, Welsh flannel manufacturers.
Field F. W., 113, Fore Street, London, warehouseman and manufacturer.
Asquith M. and J. H. Allerton, Side, near Dewsbury, Yorks, rag merchants.
Broadhead J. and J. Barraclough, Batley Carr, Yorks, woollen manufacturers.
Barker B. and Sons, Kirkstall Road, Leeds, woollen manufacturers.
Parker Joseph, the younger, and Joseph Senior Parker, Grove Mill, Birstal, Soothill, near Batley, woollen manufacturers, trading as J. S. Parker and Co.
Denton Mary Ann, Batley Carr, Batley, wool and waste dealer.

Bradley Jacob, Bruntcliffe, Morley, woollen manufacturer.
Jagger Joseph and Robert Pickersgill Jagger, Ossett, mungo manufacturers.
Shaw James, Parkwood Mills, Longwood, near Huddersfield, woollen manufacturers.

Dividends.

Heugh J., H. Heugh, and N. G. Symons, Cannon Street, London, merchants; third dividend of 3s. 6d. in the pound, at the offices of A. Murray, trustee, 104, King Street, Manchester.
Hopwood J., Duckworth Hall Mill, Oswaldtwistle, Lancaster, power loom cloth manufacturer; second and final dividend of 1s. 8d. in the pound, at the offices of W. Heppard, Richmond Chambers, Blackburn, Lancaster.
Lowe R., 9, Thornley's Buildings, Haughton, Lancaster, hat manufacturer; first and final dividend of 13s. 1½d. in the pound, at the offices of Messrs. Cooke and McCandish, hat manufacturers, Haughton, near Manchester.

Dissolutions of Partnership.

Booth A. and T. Moores, Denton, Lancaster, hat manufacturers.
Dewhirst G. C., G. B. Dewhirst, J. D. Dewhirst, and C. P. Henderson, jun., 38, New Broad Street, London, merchants, commission agents, and master cotton spinners.
Edmondson C. and J. Wilkinson, Square Road, Halifax, Yorks, stuff merchants.
Moorhouse J., H. F. W. Shute, and J. Stead, Pudsey, Yorks, wool extractors and merino manufacturers.
Reynolds C. H. and V. C. Doubleday, 2, Clapton Road, Clapton, Middlesex, dyers.
Sylvester J. and W. Bridgett, Lenton and Weekday Cross, Nottingham, lace manufacturers.
Parry J. and J. Vine, Ardwick, Manchester, cotton doublers.
Heyworth J. and J. Mitchell, Albion Works, Greensnook, Bacup, carpet manufacturers and dyers.
Hilton M. and J. Hilton, Canal Mill, Radcliffe, Lancaster, manufacturers of Havards, Oxfords, and fancy drills.
Ward C., J. C. Rouse, and G. Collier, Ellen Royde Mills, Halifax, Yorks, worsted and carpet manufacturers.
Wilkinson, W. and S. Wilkinson, Cumberworth, near Huddersfield, Yorks., manufacturers and clothiers.
Cooper D. and J., Leeds, cloth merchants, so far as relates to J. Johnstone.
Hardman T. and Sons, Bury, Lancashire, woollen manufacturers.
Burton J. and Sons, Manchester, cotton spinners and manufacturers.
Wheeler, Ure and Co., Oldham, cotton spinners, so far as regards J. Stott.
Silvester, Litton and Co., Heywood, Lancashire, fell mongers.
White and Brown, Leeds, lacemakers, under style of Stannard and Co.
Lord E. and L., Hebden Bridge, cotton manufacturers.
Dyer and Brochard, London, trimming manufacturers.

Bills of Sale.

Bone J., Fox and Hounds Inn, Neasham, Darlington, tailor	£170	0	0
Thomas B., Kelcliffe Fold, Guiseley, cloth manufacturer	£65	0	0
Kingscott C., Cleveland Street, Wolverhampton, tentmaker	£50	0	0
Prior J., Market Street, Maidenhead, hosier and fancy draper	£160	0	0 &c.
Young J., Pudsey, near Leeds, formerly worsted manufacturer	£58	0	0 &c.
Mallinson R., Marsh, Huddersfield, cloth finisher	£200	0	0
Morris G., 33, Wilford Grove, Nottingham, lace manufacturer	£105	0	0
Pearson T. (and ano.), 57, Albion Street, Leeds, woollen manufacturer			assignment.
Clarke J. H., 19, Hopwood Avenue, Manchester, cotton broker	£32	0	0
Cowdell H., Vulcan Street, Leicester, hosiery manufacturer			ass. and agr.
Lewis H., Glyn-Neath, Glamorgan, wool stapler, &c.	£38	0	0
Sutcliffe J., Langfield, Todmorden, cotton mill manager	£350	0	0
Williams W., Gwauncaegurwen, Glamorgan, woollen manufacturer	£40	0	0

PATENTS.

Specially compiled for "THE JOURNAL OF FABRICS AND TEXTILE INDUSTRIES" by G. G. M. HARDINGHAM, C.E., Fellow of the Institute of Patent Agents, 191, Fleet Street, London, E.C.

Applications for Letters Patent.

	No.
Breaking machine to remove surplus dressing. C. Garnier, Lyons	2nd Feb. 580
Bleaching and finishing. J. B. Thompson, New Cross.	3rd Feb. 595
Breaking, scutching and combing machines. B. J. B. Mills (N. de. Landtsheer, Paris)	16th Feb. 869
Combing machines. F. Fairbank and J. Robertshaw, Allerton	8th Feb. 691
Combing machines. J. Holden and J. Burnley, Bradford	9th Feb. 711
Cleaning wool. J. C. Walker, Shipley, and S. Beaumont, Roubaix	21st Feb. 955
Carding engines. R. Tatham, Rochdale, and R. S. Scholes, Cleckheaton	20th Feb. 932
Canton crape and other woven goods. N. Kumagaya, Blackburn	24th Feb. 1011

Dressing machines. W. R. Lake (M. Lutheringer)	14th Feb.	820
Damping fabrics (apparatus for). J. B. Jackson and G. Bentley, Lodge Bank, Bury	24th Feb.	1018
Felting wool. A. Mouchablon, Paris	9th Feb.	721
Jacquard or pattern pegs. E. O. Taylor, Marsden	26th Feb.	1031
Knitted looped fabrics. H. Kiddier, Nottingham	14th Feb.	806
Knitting machines. B. B. Barlow, (O. Cazeneuve, France)	31st Jan.	553
Knitting machines. W. M. Brown (G. A. Leighton and S. C. Forsaith, Manchester, (New Hampshire, U.S.A.))	21st Feb.	950
Knitting machines. F. Johnson, Nottingham.	23rd Feb.	983
Looms. A. J. Boulton (F. Rabache, L'Etoile, France)	1st Feb.	561
Letting off apparatus for looms. J. Schofield and J. C. Bentley, Littleborough	1st Feb.	606
Looms. J. Almond, Blackburn	17th Feb.	888
Looms. J. Williams and H. Barnes, Burnley	19th Feb.	906
Pirn and spool winding machines. P. H. Marriott and J. Hall, Stockport.	7th Feb.	670
Printing calico, &c. C. Hindle and J. H. Canavan, Salford	19th Feb.	901
Pirn and spool winding machines. P. H. Marriott and J. Hall, Stockport	23rd Feb.	986
Spinning and doubling machinery. J. Tatham, Rochdale	30th Jan.	503
Spinning machinery. J. T. Nelson, Leeds	6th Feb.	653
Satin fabrics (polishing). E. Edwards (F. Rousselon, Lyons)	10th Feb.	743
Spinning and doubling. W. and C. G. Bracewell and A. Pilkington, Barnoldswick	12th Feb.	774
Twist lace machinery. G. Bentley, Nottingham	12th Feb.	761
Treatment of textile vegetable fibres. J. Imray (E. Fremy and V. Urbain, Paris)	12th Feb.	763
Winding thread on spools, &c. J. P. Kerr and T. Law, Paisley.	30th Jan.	493
Washing, soaping, &c. fabrics. E. J. Jones, Dumbarton	30th Jan.	492
Winding engines (brass bobbin). J. Mosley, New Basford	14th Feb.	817
Warping machines. W. McGee and T. Watson, Paisley	24th Feb.	1006

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249	313	315	327	343	344	363
409	471	476	492	493	503	527
548	561	580	606	653	670	691 (All of 1883.)

Notices to Proceed.

(Notice of opposition to the Sealing of a Patent must be given within Twenty-one days of the Notice to Proceed being advertised in the Commissioners of Patents Journal.)

Apparatus for slaying warps. R. L. Hattersley and W. Greenwood, Keighley	18th Nov.	5487
Combing machinery. P. Kelly, Bradford, Yorks.	18th Oct.	4959
Combing machinery. W. Terry and J. Scott, Dudley Hill	22nd Dec.	6125
Drying wool, &c. P. Smith, Glasgow	11th Oct.	4823
Fibrous materials (cylinders for breaking up). J. D. Tomlinson, Rochdale	19th Jan.	315
Hearth and foot rugs. W. Smith, Kingsland	12th Oct.	4851
Looms. J. A. Pickles, Burnley	2nd Oct.	4682
Looms. J. W. Holmes, Preston	11th Oct.	4843
Looms. W. Youngjohns, Kidderminster	14th Oct.	4882
Looms. J. Bywater and C. Berford, Birstal	16th Oct.	4916
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Manufacture of elastic fabrics. W. R. Lake (T. H. Ball, Chicago, U.S.A.)	4th Oct.	4724
Machines for preparing flax, &c. C. and C. W. Murland and J. Montgomery, Annsborough, Ireland	19th Oct.	4979
Ornamental frillings. C. Jackson, Nottingham	30th Sep.	4649
Preparing warps of fibrous materials. D. R. Malcolm and G. Malcolm, junior, Dundee	2nd Dec.	5753
Stretching or finishing woven fabrics. D. P. Smith, Glasgow	13th Oct.	4864
Sewing machines. W. P. Thompson (The Morley Sewing Machine Company, Boston, U.S.A.)	17th Oct.	4939
Shuttles. T. Brookes and T. Tweedale, Crawshawbooth, Lancashire	23rd Dec.	6139
Spinning and doubling machinery. J. Tatham, Rochdale	30th Jan.	503
Treating silk yarns or threads. A. M. Clark (G. Teissomière and J. A. Deslongchamps, Paris)	16th Oct.	4927
Wool washing machinery. W. H. Greenwood, Bradford, and C. Hoyle, Keighley	13th Feb.	4867
Winding machinery. J. Liddell, J. S. and S. H. Brierly, T. H. Hirst and D. Hanner, Huddersfield	30th Feb.	5157
Winding thread on spools, &c. J. P. Kerr and P. Law, Paisley	30th Jan.	493

Patents Sealed.

773	3470	3744	3769	3788	3830	3833	3860
3875	3916	3921	3934	3939	3940	3948	3970
4041	4056	4105	4139	4140	4228	4340	4341
4520	5472	5659	5703	5874	5916	6220	
(All of 1882.)							

Patents on which the Stamp Duty of £50 has been paid.

George Ashworth and Elijah Ashworth, Manchester, "Improvements in and applicable to carding engines."	7th Feb., 1880	542
J. Julius Sachs, Manchester, "Improvements in printing and in engraving or taking impressions from fabrics or materials upon metals for the purpose of printing or embossing."	11th Feb., 1880	609
A. M. Clark, London, "Improvements in finishing or shearing textile fabrics and machinery for carrying the same into effect."—A communication.	25th Feb., 1880	836
Samuel C. Lister and José R. Gispert, both of Manchester, "Improvements in manufacturing and finishing pile fabrics."	10th Feb., 1880	590
James Webster, Leeds, "Improvements in apparatus employed for cleaning or clearing cards used in the manufacture or preparation of wool silks or other fibrous substances."	14th Feb., 1880	652
John Richard Hutchinson, Bury, "Improvements in the manufacture of ribbed pile fabrics."	16th Feb., 1880	686
George Ashworth and Elijah Ashworth, Manchester, "Improvements in the method of and means for pointing, sharpening and grinding wire cards applicable in part to other purposes."	13th Feb., 1880	626
John Imray, London, "Improvements in apparatus for changing shuttles in looms."—A communication.	5th Mar., 1880	966
James Bettney, Nottingham, "A jacquard and clipping apparatus which may be applied to all kinds of hosiery knitting machines, for the purpose of making striped fabrics of various colours."	25th Feb., 1880	823

Patents on which the Stamp Duty of £100 has been paid

James Chadwick, Chadderton, "Improvements in dyeing and printing textile fabrics."—A communication.	21st Feb., 1876	717
John Patterson, Belfast, "Improvements in machines for stamping minerals, metals, animal and mineral substances, and textile fabrics and fibres, part of which is applicable to springs for carriages, power hammers and other purposes."	12th Feb., 1876	587

Copyright of Designs.

(Registered during February, 1883.)

Class VI., Carpets.

393,414	James Humphries and Sons, Kidderminster
393,538	The Heckmondwike Manufacturing Company (Limited), Yorkshire
393,716-19	Michael Nairn and Co., Kirkcaldy
394,273-74	John Marsden, Manchester
394-372	M. Whittall and Co., Kidderminster
394,397-98	James Humphries and Sons, Kidderminster

Class XI., Furnitures.

393,241-42	Beith, Stevenson and Co., Manchester
393,240	D. Lee and Co., Manchester
393,358	D. Lee and Co., Manchester
393,532	Salis Schwabe and Co., Manchester
393,549	Thomas Wardle, Leek, Staffordshire
393,803	S. and F. Sternberg, Manchester
393,836	The Rosendale Printing Company, Manchester
393,837	A. Heywood and Co., Clayton-le-Moors
394,061-62	E. Beswick and Co., Manchester
394,063	D. Lee and Co., Manchester
394,087-89	D. Lee and Co., Manchester
394,186-87	Beith, Stevenson and Co., Manchester
394,277-79	Simpson and Godlee, Manchester
394,347	D. Lee and Co., Manchester
394,400	R. Dalglish, Falconer and Co., Manchester
394,535	D. Lee and Co., Manchester

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Notices.

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Counterfeit Imitation of French Goods.



THE Syndical Chamber of the Parisian Commission Agents has recently published an interesting and important report on the exportation trade of France. The information was supplied by the various members of this Syndical Union, and sorted and compiled by M. E. Lourdelet.

The author does not fail to make some important deductions from the mass of evidence thus placed before him. Among the most noteworthy facts thus brought to light is the increasing difficulty of selling French goods on foreign markets. This is attributed to three different causes—the development of foreign industries and manufactures, the unscrupulousness with which French trade marks and manufactures are imitated, and finally, the revival of protectionist tariffs in various countries. According to M. Lourdelet's opinion there would have been no falling off in trade if French manufactures had to struggle merely against normal and

honest competition. But, he maintains, the French are not fighting on equal terms with the rest of the world. Germany is openly accused not merely of imitating French products, but also the trade marks of French manufacturers. German manufacturers adopt names and signs calculated to deceive the consumer as to the real nature of the goods he is buying. In all trades this is more or less the case. Particular note, however, has been taken of the fact that whenever, in the ceramic arts, a new model has been devised in Paris, it is at once copied in its every detail at

the Saxon pottery works. As a rule, however, the copy is inferior to the original, because cheapness is the great object in view. Thus French trade is not only injured by this plagiarism but the reputation of French art work is lowered in the eyes of the public when called upon to believe that these cheap German imitations are real French pottery. In the United States this sort of industrial pillage is carried on with even greater effrontery. Not only are designs, models and trade marks copied, but the names of well-known firms are freely used. Of course this is illegal, but the expenses of putting the law in motion are enormous, bribery and other abuses are not absolutely unknown; so that altogether there are but few firms who have the courage to vindicate their rights. In Columbia, Peru, Chili, Venezuela, where French goods enjoy so high a reputation, the counterfeit trade has assumed enormous proportions. This is especially the case with regard to French wines, as in this instance even the marks on the corks, capsules, and labels are copied with rare fidelity. Finally, and as if this did not suffice, semi-prohibitive duties have been imposed by the United States of America, by Germany and Russia. Italy also is constantly augmenting her customs dues. Naturally silks, ornamented tissues, the *article de Paris*, and ready-made clothes suffer greatly from all these causes. Well may the commission agents of France protest. It certainly is not merely an injury and injustice to French trade, but a loss to the consumer at large, when such illegitimate forms of competition are employed. In all this, however, there is one phase of the question which should have impressed itself on the mind of the author of the report. The piracy of French ideas, models, trade marks, and the names of celebrated manufacturers, is perhaps an unintentional but nevertheless a very high compliment. Doubtless it would be preferable if the real French goods could be sold, and the compliment of imitation remained in abeyance; still the same thing would occur to any other nation equally fortunate in earning a world-wide reputation for its fabrics and natural products. These considerations do not, however, in the least palliate the conduct of the counterfeit manufacturers who wage disloyal war against the importation of French goods.

The Government Patents Bill.

DESIGNS AND TRADE MARKS.

The Bill introduced by the Government relating to the law of patents is lengthy and consists of 105 clauses. The following referring to designs, trade marks, is amongst its principal features:—

At present there is a twofold classification of designs into ornamental and useful, and they are registered under separate Acts, which, however, in their main features are the same. It is often difficult to determine to which class a design belongs, while a so-called useful design might frequently be the subject of a patent, were it not for the cost. Inasmuch as under the Bill the first fee on letters patent is to be reduced from £25 to £4 (£10 being now charged for the registration of a useful design), it is proposed to discontinue the distinction between ornamental and useful designs, and to accept for registration any novel design in the proper sense of the word. Such "useful" designs as embrace a mechanical action would be treated as subject-matter for a patent.

Additional facilities are provided for the registration of designs, provisional registration being abolished, and complete registration provided for, without the necessity of depositing actual specimens of the design on application; but such specimens must be deposited before sale and delivery of goods to which the design is applied.

It is proposed to make uniform the various existing terms of copyright by the adoption of a fixed term of four years for all designs.

Power is taken to establish an office at Manchester for the deposit of specimens or designs for cotton prints, &c.

The provisions of the separate Acts relating to the protection of unregistered designs exhibited at industrial and international exhibitions are repealed and re-enacted in the Bill.

1. The present definition of a trade mark has been extended to include—

- (a) Fancy words not in common use,
- (b) Brands; and
- (c) Single letters as old trade marks.

Power is taken to clear the list of applications for trade marks of those applications which have not been proceeded with during a reasonable period.

Provision is made for giving notice by advertisement of applications for registration, and for opposition to registration. These are now regulated by rules.

No alteration will be made in the term for which a trade mark is registered, namely, 14 years with renewal; but the provisions for this purpose, now made by rules, are inserted in the Bill.

Cotton.

(Continued from Page 26.)

At the same time that Arkwright was employing his inventive genius in devising various and numerous machines for the preparation of thread for the loom, Samuel Crompton, a young weaver, was directing his thoughts to the production of one adapted to the spinning of yarns of finer qualities than those wrought on Hargreave's "jenny" or on Arkwright's "water-frame." He had noticed that fine thread was not strong enough to bear the tension of the rollers, whilst being wound on the bobbins and, after much observation and thought, he concluded that, by combining the principles of the "jenny" with those of the spinning frame, he would avoid this tension, and supply himself with a machine capable of yielding yarns, not only finer but even, for his own loom; for it does not appear that he had any intention of allowing the improvement to become common property; but the superior quality of his cotton attracted the attention and the curiosity of the public. People went from all parts to Bolton in the hopes of being able to discover to what this superiority was due; they even climbed to his attic window to watch him at work. When he found that secrecy was impossible he was induced, on payment of a guinea each, to allow a number of gentlemen to inspect his "mule" and with the £50 thus gained he constructed another machine larger and more perfect than the first. This machine was sometimes called the "Hole-in-the-Wood" from the name of the house where he lived at the time of its invention, and also the "Muslin-wheel" because the yarn produced on it was fine enough for muslin. The distinguishing feature of this machine was that instead of the spindles being fixed, as was the case in both the others, they were placed on a movable carriage or mule, which was made to recede from the rollers about five feet, in order to stretch and twist the thread, and wheeled in again to wind it on the spindles. This first mule carried only twenty or thirty spindles. In 1775 he completed his machine and gave it the name of the "Mule-jenny," but it was not till 1792 that its capabilities were fully known. Before Crompton's time there was no machine able to produce more than forty hanks of cotton to the pound, but he spun eighty, and when in the above-named year Mr. J. Pollard, of Manchester, succeeded in spinning 278, it was looked upon as a marvellous achievement. It was sold to the Glasgow muslin manufacturers for twenty guineas per lb. The mule-jenny did not come into general use until Arkwright's patent had expired, because spinners were confined to rovings prepared for the common jenny, but, after the cancelling of his second patent, when his inventions for the preparation of cotton could be freely used, then the mule was employed, not only by the large manufacturers of the neighbourhood, but by weavers and by persons who had no connection with either spinning or weaving. "The art of spinning on Crompton's machine," says Mr. Kennedy, his friend and biographer, "was tolerably well known, from the circumstance of the high wages that could be obtained by those working on it above the ordinary wages of other artisans, such as shoemakers, joiners, hatmakers, &c., who on that account left their previous employment, and to them ought to be applied the fable of the town in a state of seige. For if in the course of their working the machine there was any little thing out of gear, each workman endeavoured to fill up the deficiency with some expedient suggested by his former trade. The smith suggested a piece of iron, the shoemaker a welt of leather, &c., all of which had a good effect in improving the machine. Each put what he thought best to the experiment—that which was good was retained." The inventor took out no patent for this discovery, but in 1812 some Manchester gentlemen got up a memorial to Government numerously signed, stating the benefits of the nation resulting from the mule, and a grant of £5000 was made by Parliament to Crompton. He used this sum in establishing his sons in business, but from a combination of untoward circumstances they failed, and the father was once more reduced to poverty. Mr. Kennedy again exerted himself, and this time commenced a subscription, with the money thus secured a small annuity was

purchased, but the recipient lived only two years to enjoy it. He died 1827. The mule was originally worked by hand, but in 1792 Mr. W. Kelly of Glasgow, invented a method of moving it by machinery, and obtained a patent for it; but finding that, in the present improved state of the cotton trade, it would be impossible to secure a monopoly of the invention without involving himself in lawsuits, allowed it to be freely used by all. This contrivance was calculated to move every part of the mule, and had it come into full operation would have rendered the employment of men unnecessary, as children would have been able to accomplish all needful work, but after a short time it was seen that more could be done and for less money by using this machinery, for drawing out the carriage only, the returning being accomplished by men. By this plan one man could attend to two mules at once, the carriage of one moving out as that of the other receded. Then again it was found that by the help of Kelly's patent one mule might contain three or four hundred spindles instead of 144 (the greatest number hitherto borne) and that each spinner could still be responsible for two mules. In 1830 a Manchester gentleman found that a mule might be increased so as to carry one thousand spindles. Mule spinning continued to be conducted in this way until several large cotton firms once more adopted Kelly's machine, which returns the carriage into its place after the draught is completed. As there was, by its use, much less hard work to be done, women were again employed as spinners. They had simply, by a gentle touch of the hand, to move the band so as to allow the carriage to fall back to its former position, regulating its motion as it fell, and to attend to the guide that formed the cop. Since the first adoption of this machine by spinners, many additions to and improvements in have been made. An instrument has been added by which the guidance of the spinner's hand in replacing the carriage and in building the cop could be dispensed with, and at the same time the cop is firmer, of better shape, and contains more yarn than those wound by hand. In 1829 this instrument was patented by Messrs. Sharpe and Roberts, machine makers, but their right to the discovery being disputed, it was some time before it could be brought into general use, but afterwards a verdict was given in their favour. Many patents have been taken out more recently for further improvements in the mule; indeed, since it was looked upon as a perfect machine, it has been made to yield double the quantity of yarn.

The Finishing of Textile Fabrics.

For the better finishing of Textile Fabrics, including the giving of durability, weight, and an improved condition and appearance with greater solidity, a patent has recently been obtained. It provides for the treating of fabrics with a mixture of chloride of iron, chloride of calcium, white arsenic and water, or a part of them according to the nature of the fabrics to be treated. The ingredients are used for heavy goods in the following proportions:—700 parts of water; 300 parts of solution of chloride of calcium; 100 parts of solution of chloride of iron, and when used 10 parts of white arsenic. For lighter fabrics: 1200 parts of water; 400 parts of solution of chloride of calcium; 100 parts of solution of chloride of iron, and when used 10 parts of white arsenic. The above proportions may be varied at the discretion of the operator. The ingredients are ground to a powder and then by the addition of water, are separately reduced to a liquid condition, by means of boiling, after each component part has been thus reduced to its liquid condition, the different liquids are then mixed together, the liquid is applied to the fabrics, at a temperature of 80 degrees (by means of rollers placed in a trough) the fabrics are then quickly dried off, and steamed or washed through with hot water, giving the above results; fabrics so finished are in no way detrimentally effected by variation of temperature, or other climatic conditions.

To determine the melting point of fat or fatty acids, a small portion is placed in a narrow, nearly capillary glass tube, and after it has become solid, a drop of mercury is placed on top of it, and then the tube is closed at both ends. It is now subjected to a gradual increase of temperature, and as soon as the fat begins to melt the mercury drops down. The experiment may be repeated a number of times.

Easy Methods of Detecting Dyes Fixed in Wools and Fabrics.*

By J. JEFFRE.

(Concluded from Page 27.)



YELLOWS.—Many yellows leave us in much uncertainty as regards their reactions. This is owing to their being produced by vegetable dyes closely allied in composition and containing the same identical secondary principles. A few reactions may be cited, which help towards the solution of the problem. Yellows may be ranged under four heads in respect of their potash reactions: (1) those which potash turns orange or red; (2) those which potash reddens more or less, and which afterwards turn grey or black with salts of iron (vitriol); (3) those on which potash has no action; (4) those which are wholly discoloured by it.

No. 1 group comprises annatto, the yellow produced with the aid of the nitric acid, chrysoine, and lead or chrome yellow *on woollens*. These are distinguished among themselves by potash turning the first of them red, the second reddish brown, with incipient decomposition of the fibres, the third a bright orange-red, while the fourth, when the action is prolonged, turns black, owing to the presence of the lead.

No. 2 group contains quercitron, sumach, yellow wood, Persian berries, fustic, barberry juice, and woad yellows. All these contain an appreciable amount of tannin, the proportion of which can be estimated by observing the depth of shades under the action of peroxide of iron. This and the depth of shade of the dye itself on the material furnish certain indications of identity.

Quercitron and sumach contain most tannin, and thus give the deepest shades with iron salts. But sumach only gives light yellows. Yellow wood contains less tannin; Persian berries less still. The yellow produced by woad is a fine canary shade; that of fustic is orange. Barberry juice gives light shades only, and is chiefly used in leather dyeing.

No. 3 group contains turmeric, saffron, aniline yellow, Martin's yellow, and picric acid yellow.

Turmeric, otherwise known as curcuma, and saffron are not affected by hydrochloric acid, whilst the three others are discoloured thereby, much washing with water restoring the colour of each. Turmeric is known from saffron by its more orange cast, and by turning green when laid in sulphuric acid of 66 degrees.

Aniline yellow has an orange cast; Martin's yellow is a decided yellow; picric acid yellow is a pale yellow. The last laid in a solution of cyanide of potassium turns red.

Aniline, Martin's, and other yellows are not unseldom found on cottons mordanted with iron salts, which might involve confusion with the dyes included in No. 2 group; but the hydrochloric acid test will remove all doubts in this particular.

No. 4 group contains chrome yellow *on cotton*. This is bleached by potash. Hydrochloric acid gives a similar reaction. Washing with water does *not* restore the colour.

ORANGES.—These may be ranged in two groups by their potash reactions: (1) turn red or brown therewith; (2) remain unchanged or acquire a yellow cast.

No. 1 group comprises the orange produced with fustic, coralline yellow, and the composite colours produced with fustic and cochineal, and with turmeric and cochineal. Potash will suffice to identify each of the four. Fustic orange turns an orange-brown under its action; coralline becomes a fine red-purple; the compound of fustic and cochineal turns a violet-brown; and turmeric and cochineal a reddish brown. Ammonia gives the same results as potash, and perhaps somewhat more clearly defined, the shades produced by this reagent being brighter. The only possibility of confusion is between the two last mentioned colours; but here nitric acid removes any doubt. On fustic and cochineal it has no effect, whilst turmeric and cochineal are turned red by it. This is accounted for by the action of the nitric acid on the turmeric. But on woollens the

action must not be too prolonged, or the colour will be destroyed altogether, and the wool turned yellow. Hydrochloric acid has no effect on the dyes in No. 1 group.

No. 2 group includes prepared annatto, hydroxide of iron, chrome orange, azo-dinaphthylamine, aurantine, phosphine, and nitro-alizarine. With these potash furnishes certain indications. Annatto becomes yellow; chrome orange on woollens turn black after a while, owing to the decomposition of the wool and the combination of the sulphur therein with the leaden base of the dye.

Phosphine acquires a lighter hue; washing with water brings back the original shade. Aurantine becomes a deeper orange, approaching red. Hydrochloric acid will also distinguish these colours. Hydroxide of iron turns a lighter yellow, and on washing with water disappears wholly. The wash-water will give appreciable iron reactions, although the sample of the material tested may have been of very small dimensions. Chrome orange becomes nearly white under the action of the acid; chrome and lead will be found in the ashes of the material. Azo-dinaphthylamine becomes a bluish grey; aurantine a light yellow, water bringing back the orange shade. Prepared annatto, nitro-alizarine and phosphine are not changed by it. These three colours can be distinguished by nitric acid. Annatto is turned green by it at first, and the colour afterwards destroyed altogether. Nitro-alizarine is unaffected. Phosphine turns a light orange-yellow. The two last are again distinguished by the potash test, phosphine turning a light yellow, nitro-alizarine remaining still unchanged.

BROWNS.—The brown dyes which will here be considered are those produced with sanders wood shaded with bichromate of potassium, catechu, manganic bistre, aniline brown, and the brown produced with a mixture of orchil, turmeric and indigo carmine. Sanders wood is known by potash turning it a yellowish grey, particularly at the selvages, whilst the same test gives no reaction with the other brown shades.

Manganic bistre is known by its discolouring under the action of hydrochloric acid, which produces no effect on other browns. The ash yields manganese, the presence of which is easily detected with the blowpipe.

The composite brown turns a deep red under the action of nitric acid, afterwards becoming a light orange-red, unlike anything in any of the other browns.

Catechu and aniline brown give no reactions with any of the foregoing tests, but aniline brown is distinguishable by its brighter and redder tone as compared with catechu.

GREYS AND MODES.—The following shades will here be considered: Campeachy Grey, Casthelaz grey, charcoal grey, pearl grey, produced with indigo carmine and cochineal, and the shades produced with turmeric, cochineal, and indigo carmine, and with picric acid, aniline blue, and fuchsine. Pearl grey turns pink with potash. With tin salts the reaction is even more marked. Turmeric, indigo carmine, and cochineal mixture becomes a red-brown with potash, and orange with salts of tin. The compound of picric acid, aniline blue, and fuchsine becomes green with hydrochloric acid, which turns Campeachy grey to a fine red shade. Casthelaz grey turns purple with potash, and blue with hydrochloric acid. Charcoal grey gives no reaction.

BLACKS.—These are easily distinguishable by the hydrochloric acid test. The old-fashioned black produced with nut-galls is discoloured by the acid altogether. Campeachy black turns a fine red, especially on woollen goods. Garance black turns brown, and in the end a brownish orange. Aniline blacks and charcoal black are insensible to the action of hydrochloric acid and the other reagents above specified. They may be distinguished by their tones, charcoal giving iron-grey shades, and aniline black deeper blacks only.

With the help of the simple reactions above described it is possible to determine the dye in any particular fabric, in spite of the uncertainties which prevail in certain cases. With the same reactions to guide us, we can also trace out the component dyes, where several have been used to produce some particular shade. The information so obtained will be more reliable than any afforded by the appearance of the goods, even to the most practised eye. In any case it cannot fail to be a useful check.

The processes just detailed may be described, if the term be allowable, as Tinctorial Qualitative Analysis. There can be

* Essay awarded a *Silver Medal* by the Industrial Society of Amiens.

no doubt that in the workroom it will oftentimes prove of essential service, as, for instance, in cases where it may be desired to reproduce some identical shade, or to determine how some particular shade has been produced.

Chemical analysis is rendering more and more assistance every day in various branches of industry, and it is hoped that Tinctorial Analysis may not be without its uses in the Art of Dyeing.

The French Commercial Policy.

A banquet was given at Lyons a few days ago by the Society of Political Economy. M. Léon Say was present and delivered a speech in which he demonstrated that economic laws were as certain in their operation as those regulating physics and mathematics, and, like the latter, could not be violated with impunity. The speaker continued as follows:—The great question for France now is to find outlets for her trade. The present industrial distress proceeds from restricted consumption, and it is not by suppressing competition that wages will be increased. The true policy to be pursued lies in an economic direction, and is rather a policy of abstention than of action. We should assure the security of our commercial relations, give free scope to individual enterprise, and not interfere at every turn in people's affairs. The State has enough to do to balance its own Budget, and should leave the mercantile and industrial community to balance theirs. Industrial development should be sought in the opening of fresh outlets. M. Say condemned a Ministerial policy which was not sufficiently solicitous to maintain the position of France abroad, and said such a policy is mistaken and unfortunate, and may have baleful effects. We should each and all of us take heart and uphold a consistent policy. We should be on the watch in all parts of the world, and maintain great outlets for our trade, establishing relations between our citizens at home and their compatriots abroad. It has been said that Great Britain has a greater Britain beyond the seas. We also have a greater France than the France in which we live. Our France is not confined within the French frontier. There are naturalised Frenchmen in many parts of the world, whose language is our own, who look at things from the same industrial and commercial point of view as ourselves, who pursue the same objects, and whose habits are the same. We ought to be in constant communication with the great France that exists abroad.

The New American Tariff.

The details of the American Revenue and Tariff Act show that the Revision of duties, which was the last important work of the Congress, is not likely to exercise a largely beneficial influence on the trade of Great Britain. This is no more than might have been expected, and it is much that the readjustment has not been so carried out as to make matters worse. So far as the textile fabrics are affected, the result may be summed up as under:—

Mixed silk goods, no change; on all silk goods there is a reduction of 10 per cent.

Woollen Goods: A general reduction, varying, according to class, from 5 to 10 per cent.

Mixed cotton and worsted Bradford goods will pay about 10 per cent. less duty, but all-wool dress goods will be subjected to an advance on the lower classes of about 50 per cent. and the finer makes 10 per cent.

Cotton Goods: On low, bleached, or dyed goods, as Glasgow muslins and linings, the advance is considerable, and virtually prohibitive. On medium cloths, as Manchester jaconets, lawns and cambrics, the reduction is equal to about 35 per cent., but upon the finer and fancy woven muslins the advance is 5 per cent.—i.e., 35 per cent. to 40 per cent. ad valorem.

Cretonnes are reduced considerably, say about 25 per cent.

Hosiery (fashioned or shaped): The advance is 5 per cent.—i.e., 35 per cent. to 40 per cent. ad valorem.

Laces, lace curtains, &c.: The advance is 5 per cent.—i.e., 35 per cent. to 40 per cent. ad valorem.

Cotton velvets: The advance 5 per cent.—i.e., 35 per cent. to 40 per cent. ad valorem.

Duties not to be charged in future on the price of tillets, packing cases and freight to Liverpool, but on the real cost of the goods only.

The *Manchester Guardian* says: "The alterations in the duties on cotton goods are not at all likely to cause any appreci-

able increase in our trade with the United States. On the lower classes of grey goods, those counting less than 25 threads to the quarter inch, adding warp and weft together, the duty is reduced from 5c. per square yard to 2½c.; when bleached, from 5½c. to 3½c. per square yard; and when printed or dyed, from 10c. to 4½c. per square yard. The next category contains goods counting not more than 50 threads to the quarter inch, and would therefore include a cloth counting 25 by 25 or 20 by 30. The duty on this class when grey is reduced from 5c. to 3c. per square yard; when bleached from 5½c. to 4c.; and when printed or dyed, from 5½c. per square yard, and 20 per cent. ad valorem to a simple specific rate of 5c. per square yard. On the other hand, there is an increase in the duty upon the more expensive cotton goods. Whenever goods valued grey at over 5d. per square yard, or bleached at over 6d., or coloured at over 7½d., the duty is to be at the rate of 40 per cent. ad valorem. Hitherto the rate on these more valuable articles has been 35 per cent. ad valorem, and it is almost entirely of these more expensive goods that our exports of cotton manufactures now consist. Partly owing to our superior adaptation, and partly to our nearness to the source of supply of Egyptian cotton, we are able to produce these articles at considerably less cost than the Americans. In the lower qualities upon which the reduction in the tariff has been made they are well able to compete with us in their home market, and in some they can even meet us in what may be called our own markets in this country and abroad."

The direct effect of the new tariff upon the worsted trade is shown in the following statement.

Cotton warp goods, costing under 10d. per square yard, worsted or wool weft, and weighing under 4oz. per square yard, now pay 6c. per square yard and 35 per cent. ad valorem. Under the new tariff they will pay 5c. per square yard and 35 per cent. ad valorem.

Cotton warp goods, worsted and wool weft, costing over 10d. per square yard, and weighing under 4oz. per square yard, now pay 8c. per square yard and 40 per cent. ad valorem. Under the new tariff they will pay 7c. per square yard and 40 per cent. ad valorem.

Cotton warp goods, wool or worsted weft, weigh over 4oz. per square yard, now pay 50c. per lb. and 35 per cent. ad valorem. Under the new tariff they will pay 35c. per lb. and 40 per cent. ad valorem.

All-wool or all-worsted goods, warp and weft, if under 4oz. per square yard, and under 10d. per square yard, now pay 6c. per square yard and 35 per cent. ad valorem. Under the new tariff they will pay 9c. per square yard and 40 per cent. ad valorem.

All-wool and all-worsted goods, warp and weft, if under 4oz. per square yard, and over 10d. per square yard, now pay 8c. per square yard and 40 per cent. ad valorem. Under the new tariff, they will pay 9c. per square yard and 40 per cent. ad valorem.

Worsted coatings, warp and weft, and wool coatings, warp and weft, now pay 50c. per lb. and 35 per cent. ad valorem. Under the new tariff they will pay 35c. per lb. and 50 per cent. ad valorem.

Cotton Velvets now pay 35 per cent. ad valorem. Under the new tariff they will pay 40 per cent. ad valorem.

Silks, if not all silk, now pay 50 per cent. ad valorem. Under the new tariff they will pay 50 per cent. ad valorem.

Silks, if all silk, now pay 60 per cent. ad valorem. Under the new tariff they will pay 50 per cent. ad valorem.

Wool, if under 16d. per lb., now pays 10c. per lb. and 11 per cent. ad valorem. Under the new tariff it will pay 10c. per lb.

Wool over 16d. per lb. now pays 12c. per lb. and 10 per cent. ad valorem. Under the new tariff it will pay 12c. per lb.

The new tariff comes into force on the 1st of July next.

The Manufacture of "Excelsior" Cloth.

By improved methods the cloth known as "Excelsior" and which was patented a few months ago, can be made in various ways—in coloured work with a white ground and a coloured border, or a white border and a coloured centre, or any alternate part of the pattern may be varied in colour having the design arranged and the cards cut to make the variations without changing the weft or warp. The specification which has just been issued gives a full description of the mode of manufacturing the figured cloth with fast embossed or raised figures, on a twill or satin ground, the figure to be plain or twill, as desired. The loom is to be gaited with three or more cumber boards, or as many as are required to make a twill or satin ground, each board to work separately. The cloth can also be made with the cards cut for each pick and all in one cumber board, and also with pressed healds in place of boards. The ends from the mounting or machine are to be on a separate beam and to have extra tension

over and above the face warp. The face warp has to be on a separate beam and drawn in on two or more healds, with one end in each space of the reed. The mounting or figure warp is to be drawn in with one, two or more ends in each space of the reed. The cloth is picked as follows:—The first two picks or more, with the machine raised, and one of the face healds up each alternate pick. The machine goes down and the first and second boards rise, and all the face healds, one pick being put in this shed. The machine again rises, and two or more picks are put in, with each alternate heald up each pick. The machine then goes down and the second and third boards rise with the face heald up for one pick. The machine again rises, two or more picks are put in with one of the healds up each alternate pick. The machine again drops and the third and first board rises, and all the face healds up, and one pick is put, in this shed. In making the cloth in two shuttle looms the ends are drawn in exactly the same as in the one shuttle cloth, as described above, and picked in the following manner:—Two picks with the machine up and one of the two face healds up each alternate pick. The next pick is put in with the machine down and the first and second boards raised and both the face healds raised. The next pick is put in with the machine down and the second and third boards raised and both the face healds raised. The next two picks are put in with the machine up and one of the two face healds up each alternate pick. The next pick is put in with the machine down and the third and first boards raised and both the face healds raised, and so on in this order until the completion of the round or pattern. The two shuttle cloth can also be produced by raising one heald only for each pick with the machine down, and also the one shuttle cloth with one heald up while the pick goes in for making the ground.

The Stoppage of Cotton Mills in Glasgow.

A hint was thrown out some time ago that the high premiums charged for insurance would have a bad effect on the cotton trade of Glasgow. It seems now that the severe strain is telling severely on manufacturers, and a practical result is found this week in the stoppage of a large spinning mill employing over 600 persons. The factory in question is owned by the Calton Spinning Company, whose works are situated in Broad Street, Mile End, an important district of the industrial part of Glasgow. Of course depression in trade has something to do with it, and it is reported that another very large spinning mill in the same district is expected to close in a few weeks. The *Evening Citizen*, commenting on this subject says—"The heavy losses sustained by the Insurance Companies lately by the burning of cotton manufactories in Scotland have had the effect, apparently, of making them look upon these as rather risky concerns, and to compensate for their losses they had increased the insurance premiums to a much higher figure than before." It is stated that at certain mills they refuse to insure at any premium. This, again, falls heavily upon the manufacturers, and the consequence is that those on this side of the Tweed are unable to compete with their English neighbours who get their mills insured at a comparatively lower figure than in Scotland. In the manufactory in the East End, where operations are expected to cease in a few weeks, there are upwards of 300 persons employed, and consequently these will be thrown idle.

Increased Wool Manufacturing in Northern India.

The climate of Northern India has of late years been damper and cooler during the winter season than the natives are accustomed to, and as these were ill-prepared for such weather, they have suffered a great deal from fever, with a large mortality. The fact is, they used to wear nothing but cotton clothing during the rainy season. It was found that the English living among them remained in good health, but they took the precaution of wearing woollen garments. Quite a revolution in dress among natives has been the outcome of this discovery, so that for the cooler season they have begun to wear cheap, light woollen goods, but, of course, the demand is for all-wool, so that in the Punjab alone, a dozen different kinds are now manufactured with English machinery from the cheap wool of the country, causing the same to be locally consumed instead of being shipped.

The Manufacture of Gold Thread.

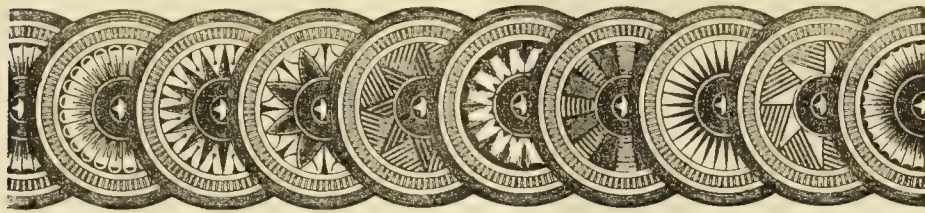
While modern industry has in many respects far outstripped the productions of former times, there are some branches of manufacture in which efforts are constantly being made to arrive at the perfection of design and execution which the works of our forefathers display. This development of artistic progress has already reached an advanced point of excellence in wood-carving and goldsmith's work, but textile manufacturers are now likely to have an opportunity of reproducing those mediæval tissues which have long been admired as models of artistic workmanship. No doubt the increased attention paid to the subject of antique woven fabrics has led to the matter becoming the object of technical research; but in any case the results arrived at on the Continent would seem of a nature to justify the commendatory tone in which their discovery is spoken of in the German press.

To trace the history of gold thread from its first employment in connection with ornamental tissues would involve an amount of antiquarian detail beyond the scope of our present remarks. Suffice it to say that there are instances, known to those who have bestowed attention on the matter, of such tissues, which have been centuries in the tombs of kings and warriors, still retaining, to a considerable extent, their original appearance. Though the secret of the manufacture of the gold thread used in the sumptuous brocaded stuffs of the Middle Ages would seem to have been lost in the sixteenth century, it has been known that it was designated Cyprian gold thread. The efforts of the scientific men who undertook the task referred to have been principally devoted to finding a means of reproducing the rich full brilliancy of the gold thread used between the thirteenth and fifteenth centuries.

To understand the principal features of this new discovery, it must be borne in mind that modern gold thread is made by a gilded rod of silver being drawn into wire (the process of manufacture of which we gave in a former Number), and, after being flattened, spun with a foundation thread of silk or other fibrous substance. Such a product is metallic in appearance and in character. This fact, it has been remarked, is an advantage in some points, inasmuch as the thread is not easily severed; but there is, on the other hand, the artistic fault that the thread is stiff and possesses a brassy look. Besides, no amount of care in the manufacture prevents the gold from losing its brightness after a certain length of time, though that interval may be a protracted one. The Cyprian thread, on the other hand, is soft, thereby enhancing the artistic effect of the drapery in which it is used, with which its colour likewise accords. As already mentioned, its brilliancy has been found to remain undimmed after the lapse of centuries.

Starting from these facts, the pioneers of this new discovery concluded that the gilding must have been on an organic substance, and that it was applied in the shape of gold-leaf by means of some adhesive substance. The researches of Professor Brücke, of Vienna, establish the fact that an animal membrane had been employed, and the further experiments made by Dr. C. O. Hartz and Dr. W. von Miller, of Munich, resulted in the identification of the membrane as the *sub-mucosa*, one of the intestinal coatings found in animals. This substance has all the tenacity required for undergoing the various operations of preparing the thread, but special machines have had to be constructed for the purpose, as those used in the production of metal thread were found unsuitable. The new thread is only half the weight of the usual description. As a foundation any fibre can be spun with the gilded membranous thread, but linen has been specially recommended as having been used in the original Cyprian article.

An exhibition of raised and flat embroidery, miniature embroideries and gold laces in antique designs, made on the new system, was recently held at the Munich Art Museum, and is highly spoken of in a leading organ of the German textile industry. It is claimed for the new thread that it does not oxydate. The flexibility and softness of touch to which reference has been made will, it is expected, facilitate its employment on an important scale in ball dresses and for similar purposes. Its production will, it is anticipated, be more economical than that of the thread now made, when arrangements are made in various countries for the efficient working of the patents granted.



ORIGINAL DESIGNS.



The first plate presented to the notice of our readers represents a design for Silk Damask of a novel and pleasing character. This design will be found useful for other purposes, such as Tapestry, Damask or Linen Goods. It has been designed by Mr. L. Horner, 57, Dodworth Road, Barnsley.

* * * *

On our second plate will be found a design for a four frame Brussels Carpet with Borders. The body of the Carpet is intended to be worked with a dead gold ground, with light shades of colour worked upon it, whilst to form a contrast the border should be dark. We have, on a former occasion, given a design with Carpet and Border in distinct styles. This one forms another of these examples. Although we briefly give the designer's idea for colouring this pattern, it would likewise lend itself readily to the Moresque effect now so popular. This design has been drawn by Mr. Irvine Field, Cringles, Oakenshaw, near Bradford.

* * * *

Our third design is the work of Mr J. G. Bowins, 68, Mawson Street, Manchester, and has been drawn for a Broché Velvet or Satin and is intended to be worked with an Ottoman ground. This should produce a very effective pattern when woven.

* * * *

* * We beg to inform manufacturers and others that adaptations of designs, published in the "Journal of Fabrics and Textile Industries," can be made at the Office by experienced Designers, and that Original Designs can also be furnished at moderate charges.

* * * *

We beg to inform Manufacturers and Designers of all classes of Textile Fabrics that we can now furnish the Designs, which have been issued in the back numbers of this Journal, bound in a neat cover. We have had 500 sets of these reprinted, for a part of which orders have been already taken. The Designs are specially adapted for Carpets, Tapestries, Table Covers, Damasks, Cretonnes, Muslins, Laces, Embossed Velvets, Linens, Quilts, Toilet Covers, Calico Prints, Silks, Stuffs, Felts, Curtains, Figured Braids, and a variety of other Fabrics. We shall be pleased to forward copies (carriage paid) on receipt of 10s. 6d. each, to any part of the United Kingdom, and for 11s. to any country abroad.



MONTHLY TRADE REPORTS.

Wool.—The London sales, which closed on the 21st March, were characterised by spirited biddings. They opened with a large attendance, prices ruling on a par with the closing rates of the last series. For some sorts, such as good scoured, and washed and scoured crossbreds, which rely chiefly on the home demand, this level was maintained and partly improved upon. But greasy wools, which formed the bulk of the supplies, suffered from the reserve which the French trade again showed on this occasion, and prices, in these cases, receded gradually—until at the close—they were quoted $\frac{1}{2}$ d. to 1d. below the opening rates. In Bradford and Halifax, a slightly better feeling has been the

rule in the market, especially was this the case towards the end of the month. The demand has been principally for Botany and the finer sorts of wools. In the Yarn and Piece trades, the demand has been rather dull, owing to spinners and manufacturers being unable to accept the low prices offered. A few orders have been given out on American accounts. In the woollen districts a fair business has passed in wools, with no alteration in prices.

Cotton.—The markets, during the month, have, on the whole, been rather dull, with a tendency to a decrease in values. In the second week of the month a slight improvement was manifested, but only for a short time, since then the trade has been characterised by a want of animation. In the yarn and cloth branches, the business passing has been slow, this applies specially to the latter department. The sales that have taken place have been at very low rates, the margin for profit being fractional. In shirtings of the better class, a moderate quantity has been sold, but in the lower qualities, business has been of an unsatisfactory nature. Prices for manufactured articles show no appreciable decline, as they are at such a low ebb that they admit of little, if any, further reduction.

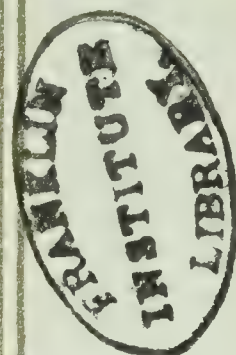
Woollen.—In Leeds, at the commencement of the month, a good business passed in nearly all departments at firm rates. In better class worsteds, fancy tweeds, &c., large sales have taken place. For export, the contracts have been good. Stocks that have been on hand for some time have, to a great extent, been moved and the general rule is to work full time on new goods. The Easter holidays interfered a little with the progress of business, but to no great extent. In Huddersfield the strike still continues to the great detriment of the prosperity of the town. What trade has passed has been in small patterns for worsted coatings and fancy suitings. In the heavy woollen districts business is of a dragging nature with no variation in prices.

Linen.—In the linen departments the markets have been rather quieter, but prices have kept tolerably firm. The holidays interfered a little with the course of business, which improved in tone slightly towards the end of the month. In the jute branch a good business has been passing, especially in goods, and prices have had a very firm tone with a rising tendency. This department of the textile trades has made rapid strides during the past eighteen months, the pieces that are now being taken from the looms being a great credit to the manufacturers of jute fabrics.

Lace.—The improvement in the lace trade during the month has not been of a very perceptible character, the amount of business passing having been below the average. In the cotton edging departments there has been a moderate trade and also in mosquito and bobbin nets, but still, on the whole, these branches are only in a dull state. The curtain branch also shows very little signs of an improvement. No quotable change has occurred in yarns either in cotton or silk. Prices as a rule keep fairly firm.

Carpets.—Trade in the carpet districts is in the same unsatisfactory condition that we have had to chronicle for some months past. The prices procurable under contracts are such, that it is totally impossible for manufacturers to work at even a small margin of profit. The publication of the United States Tariff Bill has given a rather firmer tone to the trade, but although the reduction of duties on the various makes of carpets ranges from 7d. to 5d. per yard, yet it is thought this slight reduction will make no appreciable difference in the demand for carpets of English make as the duty is still such as to overweight the English manufacturer. The yarn trade keeps fairly employed and prices have been firm.

A Russian commercial deputation, which recently started for Bulgaria for the purpose of promoting trade between Russia and the Principality, has arrived at its destination. One of its main objects is to improve trade in Russian cloths which, as regards that supplied for the Bulgarian army, has, it is said, been found superior to the Austrian article. A regular service of steamers between Remi and Widdin, which will work in connection with the Russian steamers Furiten and Gagaria, and compete with the Austrian packet steamers, is about to be commenced.



SILK DAMASK.

THE JOURNAL OF FABRICS AND TEXTILE INDUSTRIES.

12TH APRIL, 1883.

DESIGNED BY I. FIELD.



BRUSSELS CARPET.

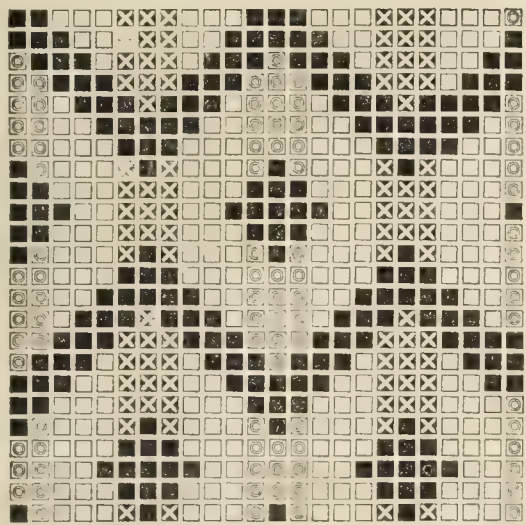


BROCHÉ VELVET.

ORIGINAL DESIGNS.

Shirtings, Gingham, &c.

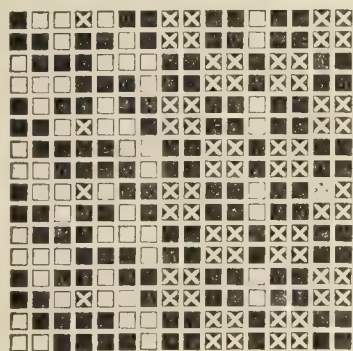
No. 48.



Design.

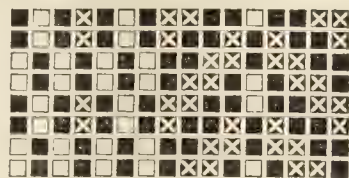
In design No. 48 the ■ represents the warp. The □ indicates red, and □. blue, the blank spaces white.

No. 49.



Design.

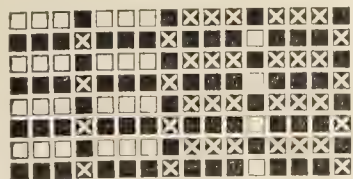
No. 50.



Design.

Patterns Nos. 49, 50, and 51 are 16 end Patterns, the warp being as follows:—

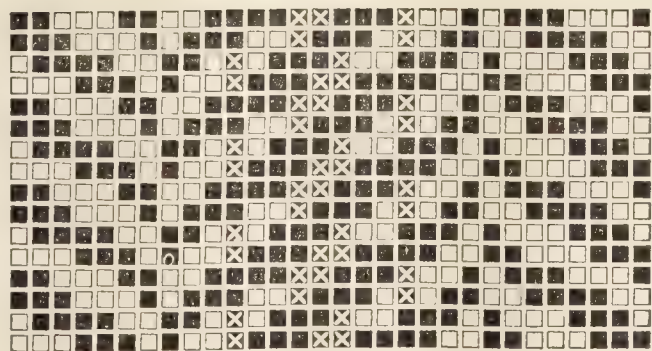
No. 51.



Design.

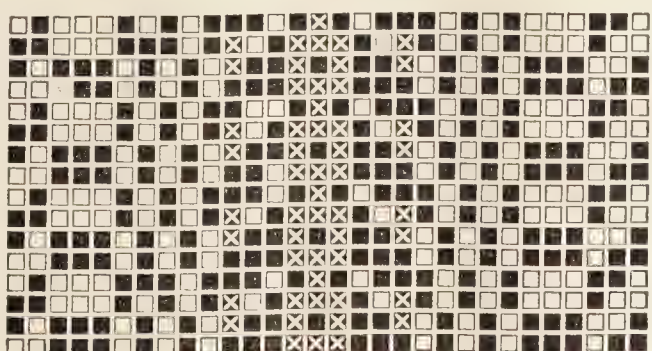
3 ends White. 1 Blue.
3 „ „ 4 „
1 „ „ 4 „

No. 52.



Design.

No. 53.

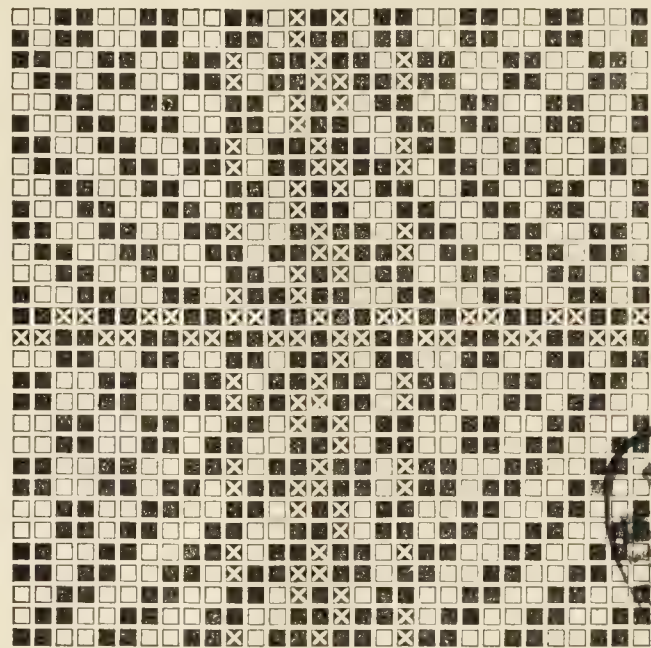


Design.

Nos. 52, 53, and 54, are 30 end Pattern with warp as follows:—

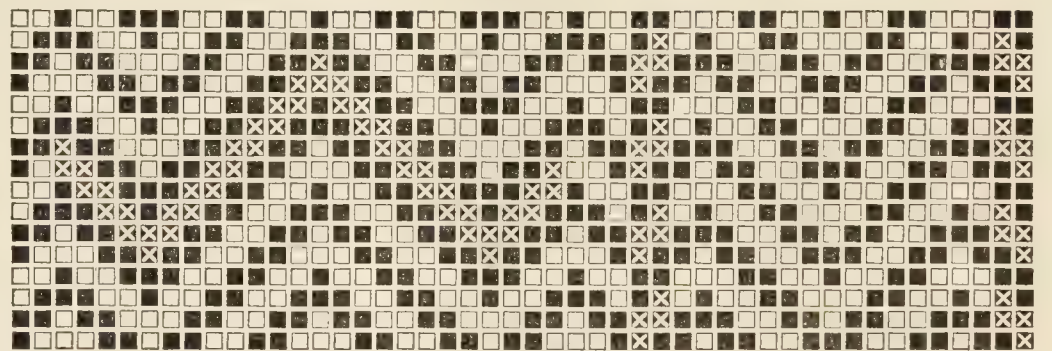
21 ends White. 1 Blue.
2 „ „ 3 „
2 „ „ 1 „

No. 54.



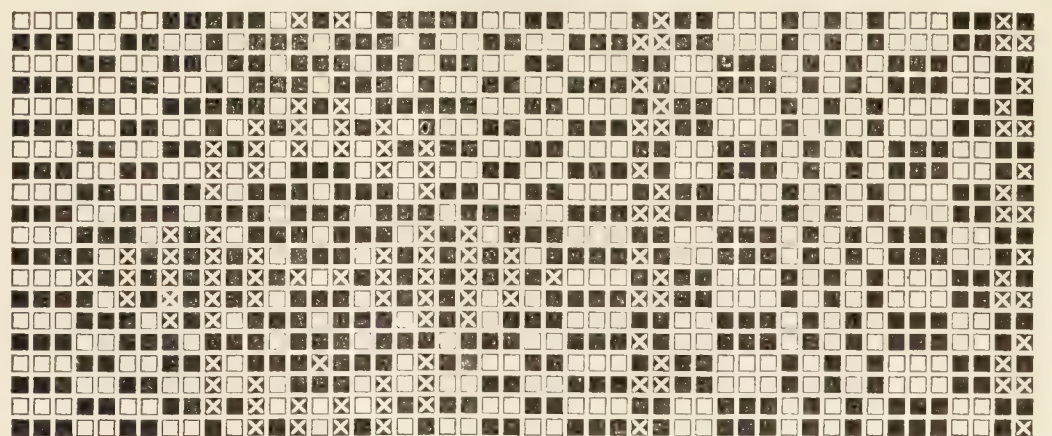
Design.

No. 55.



Design.

No. 56.



Design.

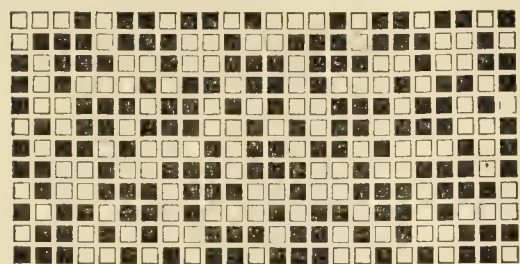
No. 55 and 56 are 48-end patterns with warp as follows:—

3 ends red. 23 blue.
3 „ „ 2 „
15 „ „ 2 „

In all the above designs for Shirtings, &c., ■ represents the weft, and □. the warp. In cutting the cards for designs Nos. 49 to 56 inclusive, cut all the □. With the exception of No. 56 all the patterns are for stripes, but with a little manipulation they may be made into effective checks.

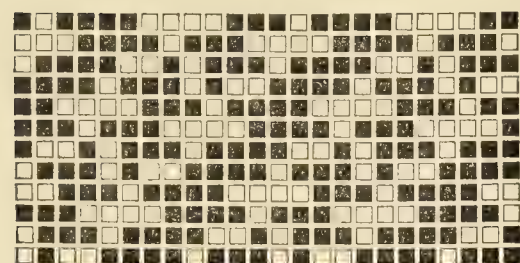
Coatings.

No. 57.



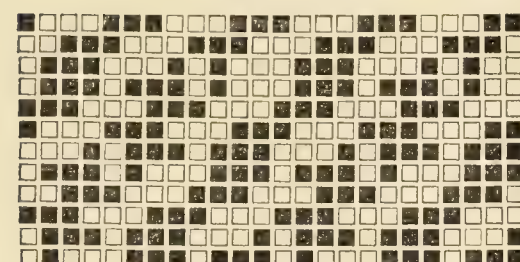
Design.

No. 58.



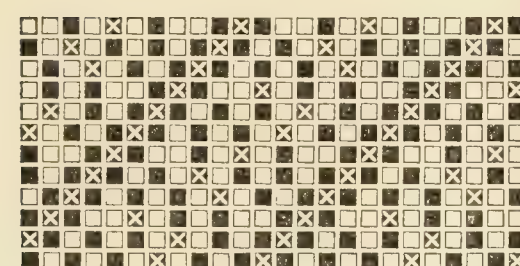
Design.

No. 59.



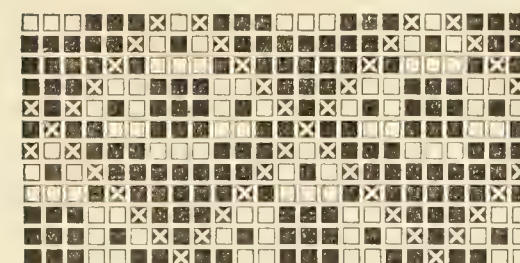
Design.

No. 61.



Design.

No. 62.

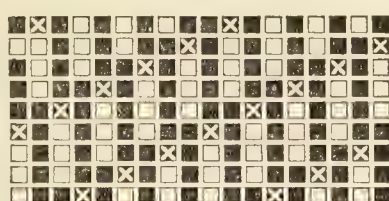


Design.

Designs Nos. 57, 58 and 59 are small effects for Worsted Coatings. The squares marked ■ represent the weft.

Nos. 60, 61 and 62 are for Cotton-backed Coatings, pick and pick—that is, one pick of Worsted and one of Cotton. In No. 60 all Cotton weft may be used. The warp in this Design is represented by ■ but in Nos. 61 and 62 this represents the weft. The directions for cutting the cards are as follows:—In No. 60 cut the ■ first time, and the second time cut □ ■ together. In No. 61 cut □ first time. The second time cut □ ■ together. In No. 62 cut □ ■ together first time, and the second time cut □ ■ together.

No. 60.



Design.

Machine Measurement and Marking of Piece Goods, Linen, Cotton, Woollen, &c.

A trial has been made in Glasgow of a somewhat novel and interesting piece of mechanism, the object of which is, while any textile fabric is being measured and wound up, to stamp on the selvage the length of the piece, by a successive series of figures, yard by yard, up to any limit. By this means the length of a piece of cloth can be seen at a glance, so that in selling there is not the same use, as formerly, for the yard-stick, and disputes between seller and purchaser as to the exact measurement are obviated. To the retail dealer it is considered such marking will save much trouble and time in stock-taking, as webs which have been cut will not require to be opened out and measured. The tests were made in the office of the patentee, Mr. Robert Murdoch, 180, West Regent-street, Glasgow, in presence of a number of gentlemen connected with the cloth manufacturing trade, and were considered quite successful in showing the capabilities of the invention. The mechanism is simple, consisting of revolving wheels or discs a yard in circumference, on which the numbers are engraved, the figures changing with each revolution.

The Macclesfield and District Silk Trade.

The holidays at Easter had the effect of interfering with the ordinary run of business in the Macclesfield district; but there was sufficient to indicate that the renewed activity which set in afterwards bids fair to be well maintained. Just now the bulk of the labour seems to be on hand-made goods which are very much in demand both for home and shipping purposes. One of the manufacturers has been entrusted with an order from the Prince and Princess of Wales, so that the efforts recently made to bring the merits of English silk-made goods more prominently before the public are bearing fruit. At Leek and at Congleton there is not much trade passing, and on the whole there is a scarcity of orders of any considerable weight.

Protection in New Zealand.

A correspondent, writing from Dunedin, New Zealand, on January 29th, thus refers to the fiscal policy of that colony:—"Here in New Zealand, we do some curious things. For example, the South island produces corn in abundance, while a staple product of the North island is timber, and each is protected against the other. To keep foreign corn out of the North island we impose a duty of one shilling per 100lb. on grain and flour; and to favour North island timber in the South we impose a duty of two shillings per 100 feet on timber. Thus two portions of the same country are protected, the one against the other. The North is always trying to get the duty off corn and to keep the duty on timber; while the South is always trying to abolish the timber duty, but will not consent to the repeal of the corn tax. I scarcely think you can beat this for protection, pure and simple."

Wool and Cotton Dyeing Receipts.

The following dyeing receipts are translated by a contemporary from the *Deutsche Farber Zeitung*:—

FASHION BROWN ON TOPS OF COMBING-WOOL.—10 kilos tops are slowly boiled for half an hour in a bath to which there have been added 275 gr. orange J, 150 gr. indigotine and 1 kilo alum. After being dyed, the tops are washed in tepid water.

DARK BLUE ON DITTO.—10 kilos of tops are dyed a dark corn blue in the tub and then carefully washed; the dyeing is then completed in a boiling hot bath of 40 gr. extract of fustic, 100 gr. indigotine, 300 gr. ground logwood and 500 gr. alum being stirred therein during three quarters of an hour.

GREEN ON DITTO.—10 kilos tops are for three quarters of an hour treated in a bath to which there have been added 275 gr. indigotine, 100 gr. golden yellow, 1 kilo alum and 500 gr. sulphuric acid.

DARK YELLOWISH GREEN ON FULLED LOOSE WOOL.—200 kilos of pure wool are boiled the first day in a bath containing 40 kilos alum, 4 kilos chromate of potassa, 4 kilos tin salt and $\frac{1}{2}$ litre sulphuric acid, and the next day in one containing 3 kilos indigotine, 25 kilos extract of fustic (30°), 10 kilos ground logwood and 5 kilos extract of archil (plain), for an hour, to to which there are added 2 litres of very much diluted muriatic acid, sprinkling the latter over the same. Half an hour's further boiling will complete the dyeing process.

DARK BLUE ON LOOSE WOOL (FULLED).—200 kilos of pure wool are boiled thoroughly for an hour and a half with 10 kilos alum, 2 kilos chromate of potassa, 1 kilo blue metal, and $\frac{1}{2}$ litre sulphuric acid, and the day following the dyeing is completed as per grade wanted with 50 kilos logwood and a solution of 1 kilo bluish aniline violet in which the whole is boiled for an hour and a quarter.

DARK VIOLET ON 5 KILOS OF WOOLLEN YARNS.—The scoured wool is dyed with 150 gr. marine blue and acid a bright dark blue; it is then washed and dyed over again in a fresh bath with violet 213 as per precise grade wanted.

SCARLET ON COTTON.—50 kilos are immersed in a hot bath containing 2 kilos stannate of soda and $\frac{1}{2}$ -1 kilo soap. The cotton is worked in this bath 1-1 $\frac{1}{2}$ hour, and then wrung. Next, a cold bath is prepared, consisting of 10 hot dissolved alum and 5 kilos of crystalized soda, in which the cotton is stirred during about two hours, and then thoroughly wrung. By this time the dyeing bath has to be got in readiness, warm to hot, to which will have to be added 1 $\frac{1}{2}$ -2 kilos scarlet (substitute for cochineal), and about 80-100 gr. aniline orange, to serve for two baths, in which the twist is left to stay for an hour or an hour and a half. It should be remarked that the first and last bath should remain as they are, and that for each lot $\frac{1}{2}$ of the bath should be refilled with fresh water, which will add as much as was lost by wringing the twist. As for the second bath it should be mentioned that the soda solution is only added just before the twist is put into the bath. This scarlet will not fade under the influence of the atmospheric air, but it will not prove fast on being washed.



MACHINERY, TOOLS, &c.

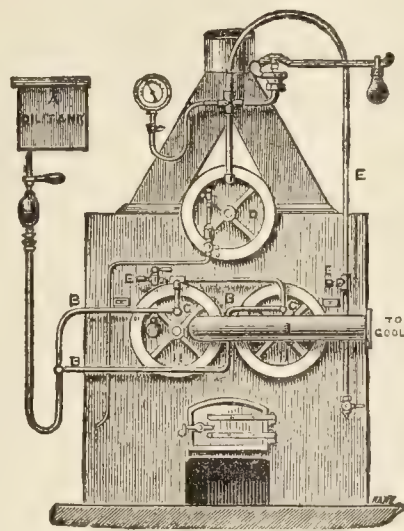
Improvements in Jacquard Apparatus for Weaving Shawls, Travelling Rugs, Fancy Waistcoatings, &c.

AN invention has been recently patented by Mr. William Buckley, manufacturer, of Delph, and Messrs. Hutchinson, Hollingworth and Co., of Dobcross, Yorkshire, which to manufacturers of fancy fabrics will undoubtedly prove of great advantage. The improvements refer to the jacquard or peg-lag apparatus employed in weaving figured fabrics, shawls, travelling rugs, fancy waistcoatings, or any goods that require alteration of patterns, and also to the means of removing the pressure of the finger from the shuttle box swell, just before the shuttle is sent from the box, in order to reduce the power required to send the shuttle therefrom. Referring to the first part of the invention, the apparatus in general use is composed of one cylinder carrying a chair of lags or cards, in which are projecting pegs or holes arranged according to the pattern intended to be woven. These pegs are caused to strike against one end of the jacquard needles, which set in motion other parts of the apparatus for opening and closing the sheds. This construction of apparatus answers well for some classes of weaving, but in the weaving of figured fabrics it is objectionable, because when the pattern requires altering the loom has to be stopped, and the lags around the cylinder changed for other lags, which will alter the pattern of the fabrics, and as this has to be done many times in weaving one piece of fabric in many classes of goods, the loss of time caused by the stopping of the loom and in the changing of the lags is very great. The object of this patent is to prevent this frequent changing of the lags, it is accomplished by the use of two or more cylinders, each carrying a chair of lags provided with pegs, all of which represent a different design. These cylinders are carried by a swinging frame or bucket worked upon a fulcrum, which, for purposes explained below, is capable of sliding laterally in a slot formed in another bracket fixed to the upper part of the loom. In connection with the fulcrum of the swinging frame are two links jointed together, the outer one working upon a stud on a stationary bracket. When the pattern indicated by the lags on one of the cylinders is complete and it is necessary to change the lags for an alteration of pattern, instead of removing the lags from the cylinders as at present, a fresh cylinder provided with lags is brought into position. This is effected by a vertical rod, connected to the two links, being raised by means of a hand lever, which raises the joint of the links causing the fulcrum of the swinging frame to slide backward laterally in its slotted bracket, thereby withdrawing the pegs of lags out of the way of jacquard needles. A vertical lever connected to the swinging frame carrying the cylinders is then moved in such direction either to the right or left, as to place another of the cylinders with its lags opposite the jacquard needles. The vertical rod, which raised the joints of the links and withdrew the cylinder from the needles, is then operated in the opposite direction, causing the fulcrum of swinging frame to slide back in its bracket, and so place the fresh cylinder in the required position for actuating the needles. When the cylinder is placed opposite the needles, the shaft ends thereof are placed in a notch of a bracket placed to receive them, by which they are kept steady and held in position until the pattern is woven. Thus by employing two, three, or more cylinders provided with lags, and operated in the manner herein described, the necessity of changing lags when weaving is in many cases entirely avoided. In all cases where lags are referred to, it will be understood that they may be substituted for cards, and where pegs are mentioned, it must be understood that holes may be employed in conjunction with cards. For the purpose of removing the pressure of the finger from the shuttle box swell, just before the shuttle is sent out of the box, so as to reduce the power required to send the shuttle therefrom, a lever is attached to the stop rod of the loom, to one end of which is hinged another lever, having at its lower end an anti-

friction roller. This latter lever is so hinged that in the backward motion of the slay the antifriction roller would come into contact with a fixed plate or projection, and move the first mentioned lever in such manner as to operate the stop rod, and consequently remove the pressure of the finger off the swell, and this is arranged to take place immediately before the picker strikes the shuttle; on the return motion of the slay the friction roller would ride over the fixed plate and not operate the stop rod.

The Koh-i-Noor Gas.

The manufacture of gas from material other than coal continues to receive attention at the hands of inventors and others. The most recent process that has been brought under notice is that which has been developed, perfected and brought into use by Messrs. Rogers Brothers, of Watford, some fifteen months since, and which has consequently had sufficient time for trial to establish it as a success or otherwise. The gas is produced from shale oil, by means of the apparatus shown in the accompanying engraving, in which A is the oil tank from which the pipes B B pass to the two steam jets C C placed in the centre of the two inner retorts. D is a boiler, the pipes E E from which conduct steam at about from 15 to 20 lb pressure to the point E on the retort casing, whence they pass round the interior of the apparatus (thus super-heating the steam), leaving it on the other side close to the steam cock, from which point they conduct the steam to the two steam injectors C C, where they meet the oil and inject it, in the form of a fine spray, into the inner retorts. The gas there eliminated from the oil passes through the outer and hotter retorts H H, where it is made into a fixed and permanent gas, passing thence through the pipe I to the coolers, then on to the purifier, where it simply passes through water and is then ready for use. It will thus be seen that the process of manufacture is very simple and inexpensive, the cost being stated to be at the outside 2s. per 1,000 cubic feet. The use of steam is important, as it entirely prevents the carbon depositing in the retorts, and it is, moreover, invaluable for injecting the oil into the retort in the form of a very fine spray. By this means every particle of the oil is brought into contact with the heated surfaces of the retort, and perfectly and wholly volatilised, thus yielding the highest results. Careful analysis shows the Koh-i-noor gas to be more pure than coal gas, as it is entirely free from sulphuretted hydrogen and carbonic acid, for which reason health is not endangered by a vitiated atmosphere, nor are plants, books and



pictures damaged by its use. The following is the result of analysis:—

Sulphuretted hydrogen	..	..	..	..	0'00
Carbonic acid	..	..	..	..	0'00
Oxygen	..	..	..	..	0'73
Nitrogen	..	..	..	..	5'06
Luminiferous hydro-carbons	..	..	..	..	16'29
Marsh gas	..	..	..	..	46'17
Hydrogen	..	..	..	..	31'61
Carbonic oxide	..	..	..	..	0'14

100'00

The Koh-i-noor gas has also been submitted to various tests extended over a considerable length of time, and it is found to be unaffected by either heat or cold, and to travel well. It has been thoroughly tested in driving gas engines, and is found to answer equally well with coal gas, and to be much more economical. The apparatus required for its manufacture takes up but little room, the whole area occupied by a double retort generator, such as that illustrated in our engraving, is only about 6 feet square, and 300 cubic feet of 60 candle gas (said to be equal to 1,200 cubic feet of coal gas) can be made by it in one hour from three gallons of oil, the cost of which is 6d. per gallon. If it is desired to dilute the gas with air for use in gas engines or other purposes, the apparatus can be made to do this automatically. One of the great advantages of the Koh-i-noor gas is that it can be manufactured with the plant of an ordinary coal gas-works, by making a very slight alteration in the retorts and the purifiers. Such an alteration has been effected at the Royal Paper Mills, Wandsworth, by the proprietors, Messrs. McMurray and Co., who previously made their own gas from coal, where the apparatus is working satisfactorily. This firm has other mills where the gas has been adopted with success. At Loudwater they had, about nine months ago, two of the old gas retorts replaced by two upon the new system, and one of the old lime purifiers altered to allow the gas to pass through water. The gas is there made at the rate of about 10,000 cubic feet per day, and is passed through the washer to the gas holder for use. There are about 600 gas burners in these mills, and we have been informed that the results of the manufacture are in every way satisfactory. The gas produced and burned gives a bright pure white light, such as presents no difficulty in distinguishing colours. Besides the above-mentioned mills, the Koh-i-noor gas apparatus has been fixed at various other mills, also at Rossie Castle, Montrose, and at King's Langley Station. Messrs. Rogers Brothers are at present making machinery for several mansions and villas for from 20 to 100 lights each. It will be seen, therefore, that the gas is equally adapted for large or small establishments, and it appears to be of real value and practical importance, and in all respects a great success.

Tapestry.

The revival of the Gobelin tapestry looms in this country, due to the energy of Madame Le Beuf, is attaining some importance. Under this lady's guidance a factory has been established near Shepherd's Bush for the production of the woollen tissue of various widths, and one of the largest looms for wide widths in this country is here to be seen. Madame Le Beuf has also introduced a new method of weaving a golden thread into the materials, to be used specially for borders, which has a most charming effect. There is much instructive pleasure to be obtained by all who are interested in tapestry painting from a visit to her studios which are attached to the factory. Here the beautiful effects which alone can be produced upon woollen tissue can be seen in their many applications. These studios are for the public generally. The private lessons we understand are given by M. E. Rischgitz at his residential studios in Lindengardens. All that has hitherto been done in the way of tapestry has never had the merit of remaining perfectly permanent. This, it would appear, M. Rischgitz succeeds in doing, clearing up all difficulties with regard to the fading and vanishing of colours by damp and such like agents. The specimens of tapestry painting shown us by M. Rischgitz have great brilliancy and depth, and are capable of being rolled and folded without cracking or sustaining injury. This gentleman has recently published a "Handbook of Tapestry Painting with Indelible Colours," which treats of the manner in which these greatly desired effects are obtained. It is a short, concisely written pamphlet, with information concerning the canvas, the colours, and the best methods of painting the hair, flesh tones, trees, water, and the like, and other points of difficulty that suggest themselves to him. There is also a table of colours and their combinations, which is a useful feature.

Trade Marks.

A new edition of the rules under the Trade Marks Registration Acts, 1875-77, has been issued, and the attention of those persons interested in trade marks should be given to the important amendments and additions contained therein.

No. 16 of these rules is as follows:—

In all cases where an applicant neglects to proceed with the registration of his mark within 12 months from the date of application, or within six months from the date of the expiry of the advertisement in the official journal, the registrar may deem such application to be abandoned.

It is important, therefore, that any person who has a pending application for the registration of a trade mark on record at the registrar's office, and has neglected to proceed with the same as mentioned in the above rule, should take immediate steps to prevent such application from being cancelled by the registrar as abandoned.

ODDS AND ENDS.

The following is an accurate and complete list of recent dividends by cotton spinning companies in Oldham and district:—Sun Mill, 12 per cent; Hathershaw, 7½; New Earth, 8½; Equitable, 10; Prince of Wales, 6; Swan, 5; Ridgefield, 8½; Hey, 9; Hollinwood, 10; Hope, 10½; Longfield, 4; Parkside, 13½; Royton, 13½; Oak, 15; Stanley, 10; Quick Edge, 6½; and Albert, 10. They are all quarterly dividends, excepting the Prince of Wales and Swan Companies, which are half-yearly.

It appears from a special report of the United States Bureau of Statistics that the excess of the exports over the imports of American trade was 260,000,000 dols. in 1881, but that in 1882 the balance in favour of the exports was a little less than 26,000,000 dols. For the first half of the current fiscal year the balance in favour of the exports was 54,500,000 dols.; the exports were no less than 425,500,000 dols. in round numbers for the six months; and the imports were 371,000,000 dols. It is estimated that if this rate of export should be maintained the exports for the year will exceed those of last year by 100,000,000 dols. In December last the value of the exports of merchandise was 92,960,433 dols., or about 3,000,000 dols. per day. This rate has only once been exceeded in the history of the United States.

The *Dundee Advertiser* states that Mr. Smart, of the Messrs. J. and J. Smart, manufacturers, Brechin, has handed a cheque to Provost Moneur for the sum of £500 for the purpose of founding a bursary in connection with the University College, Dundee. Mr. Smart's desire is that the bursary should be given to some deserving student in the branch of mechanical engineering.

According to the *Moniteur des filset tissus*, Messrs. Berthet, Foussemagne and Herand have introduced a machine for keeping the skeins of yarn which are dyeing, in continuous motion. This principle is contrary to the methods now in use, according to which, the skein is left to his own weight, when it is immersed and only subjected to alternate changes of position. There is an additional change applied in such a way as to extend the filaments and keep them in a parallel position: and it is claimed for this method that it ensures a more uniform character in the dyeing of the textile substances.

The Antwerp Société Commerciale, which represents the commercial interests of the town, demands that the same concessions with regard to pilotage and lighthouse dues be accorded to all Transatlantic lines which have a regular service from Antwerp and have adopted a tariff approved by the Belgian Government, so that the granting of these concessions shall no longer favour one line to the detriment of another. The Antwerp *Precurseur* says that the Peninsular and Oriental Company will continue its service from Antwerp, and that its steamer Nepal is now loading there.

Amongst the numerous interesting features of the approaching Electrical Exhibition at Vienna will be a series of practical tests as to the effect of the electric light on the richer class of textile materials and on embroideries. The necessary specimens of these articles are lent by the Emperor, and will be arranged in a suitable pavilion. Its dimensions will be sufficiently large to allow of the tests being of practical value, and it is said that more than one method of electric lighting will be tried, so that a comparison may be instituted as to the relative effects produced by various systems of illuminations.

It is always pleasant after a period of depression to notice an increase of manufacturers. The Hagg Mill at Johnstone, near Glasgow, which has been tenantless for nearly ten years, has now been refilled with machinery, and a start has just been made in the cotton manufacturing trade. At Hawick, close to the Corder, we notice that the firm of Messrs. Greenwood, Watt and Co., tweed manufacturers, Hawick, have purchased the site of the old gas works, at the price of £2,250, with a view, it is stated, of extending their factory which lies in close proximity.

The shareholders of a new kind of mill in Bombay, known as the Indian Manufacturing Company's Mill, held their first general meeting recently at the mill premises on the Byculia Flats. The mills in Bombay have hitherto been satisfied to go in for manufacturing low counts of yarn and coarse cloth. The new mill aims at something higher, and is intended to spin an average of 30's yarn, and to weave shirtings, which have never yet been attempted by any other mill. The chairman, Mr. Vundravundas Purshotumdas, told the shareholders that theirs was, he believed, the cheapest mill yet erected in India, as it cost only Rs.24 per spindle and Rs.350 per loom.

The President of the Industrial Society of Rouen has lately observed that the continuous system of bleaching for calico printing, which ought by this time to have supplanted the old, tedious, intermittent system, has not done so in Rouen except in a few scattered cases. This must be owing to either want of enterprise or want of capital, for the advantages in respect of goodness and cheapness of bleach, as well as freedom from stains, tears, etc., is immensely on the side of the continuous system. We doubt very much if any printers of England have had the trouble with steins in their steam work, which M. Witz refers to in an article which appears in this number of our publication.

Two years ago in a works at Bettenhausen, near Cassel, says the *Farb. Must. Zeitg.*, brown spots and stripes appeared on the calico after steaming. They occurred as repeats, were tender, and could be removed by the steam-chloring-machine. Close observation and experiment showed that they were not produced in the lime, or resin-boil, but because while standing in pile after chemicking for some time the bleaching powder solution concentrated in certain exposed portions. On piling the chemical pieces in wooden cisterns or boxes, in order not to expose them, prolonging the time of the lime, and resin-boils, and using weaker bleaching powder solution (viz., ¾ deg. Tw.) the occurrence of the spots ceased.

A New India rubber oil has been patented in Germany, which is intended to serve as a protective against rust. Under the process the rough oils obtained in the dry distillation of brown coal, peat, or other bituminous substances are subjected to a further distillation. Thinly rolled India rubber, cut into small strips, is saturated with a four-fold quantity of this oil, and is let stand for eight days. The mass thus composed is subjected to the action of vulcan oil or a similar liquid until a homogenous, clear substance is formed. If this substance is applied in as thin a layer as possible on a metal surface, it forms, after slow drying, a kind of skin which insures an absolute protection against atmospheric influences. The durability of this covering is said to be most satisfactory. India rubber oil is also said to be effective in the removal of rust which has already been formed.

NOTICE TO ADVERTISERS.

Advertisements will be inserted at the following rates; (in all cases prepaid): *Twenty words, One Shilling; Sixpence* for each additional *Twelve* words or part of *Twelve*. The address being counted as part of the Advertisement.

Displayed Advertisements according to arrangement.

Wanted.

TOILET COVERS, Alhambras, Quilts, Honey Combs, &c. Designer of several years experience in above trade requires a Situation. Moderate Salary. Address, J. W. C., "Journal of Fabrics" Office, Halifax.

Mills to Let and Sell.

TO be LET in LEEDS, a good substantial WOOLLEN MILL and other PREMISES, with Cornish Boiler, Two High-pressure Engines, and Main Shafting. For rent and further particulars, apply William Easton, Licensed Valuer, 9, East-parade, Leeds.

MILL to LET.—To LET ALBION MILL, Greengates, Apperley Bridge (lately occupied as a woollen mill), with Engines, Boilers, &c. Abundant supply of water. Near railway stations; hands plentiful. Apply Mr. Alfred Law, Card Maker, Cleckheaton; or Frederic G. Edmondson, Eldon-place, Bradford.

CABBAGE MILLS, Keighley.—To Let or Sell (with immediate possession if required), the above mills, which comprise one Large Shed, suitable for either Weaving or Combing, and Warehouse and Mill, each four storeys. Situation excellent. Water supply good, and hands plentiful. Apply Messrs J. Whitley & Son, Scott Street, Keighley, or at the mills.

PETER DIXON & SONS LIMITED, in Liquidation.—The large Manufacturing, Dyeing, Finishing, and Woollen Spinning Works, situate at West Tower-street and Shaddongate, Carlisle, and Warwick Bridge, near Carlisle, are now for SALE by PRIVATE TREATY, as a going concern. For further and full particular apply to the Liquidators, Mr. Mitchell, City and District Bank, Carlisle; or to Mr. Muir, at the Works.

FOR SALE by Private Bargain, the Valuable TURKEY-RED DYE-WORKS, situated on the banks of the Clyde at Eastfield, Rutherglen, near Glasgow, so long and so successfully carried on by Messrs. Neil, Matheson & Co. The buildings are most substantial, the machinery and plant have been recently renewed, and the whole are in first-rate working order. There is a considerable space of vacant ground attached to the works, so that they could be extended to advantage. The water supply is unlimited and good, being above the tidal action. The supply of coal is abundant, there being several extensive coalworks in the immediate vicinity. In connection with the works there is an excellent dwelling-house, containing three public and six bed rooms, with all moderate conveniences. Orders to inspect the works and every information will be given by Wharrie, Colledge & Brand, 109, Bath-street, Glasgow; or Thomas Weir, writer, 111, Brunswick-street, Glasgow.

THE GAZETTE.

Adjudication of Bankruptcy.

Waite C. (the younger), Golden Square, London, woollen merchant.
Gabbott William, Walsden, manufacturer.
Stephenson J., West Town, Dewsbury, dyer and yarn spinner.
Adams Caroline, Hackney, London, trimming manufacturer.

Sequestrations.

Clark James, bleacher and finisher, South Woodside, Glasgow.
Mitchell Thomas and Co., manufacturers and warehousemen, 38, Queen street, Glasgow.

Liquidations by Arrangement or Composition.

Ainley, Shaw and Ainley, Lockwood, near Huddersfield, woollen manufacturers.
Turner W., St. James's Road, Blackburn, cotton manufacturer.
Eastwood J. and J., Haslingden, Lancashire, power loom cloth manufacturers.
Gledhill T., Golcar, Yorkshire, woollen cloth manufacturer.
Lord J., Union Street South, Halifax, dyer and bleacher.
Raines C., 24, Grosvenor Market, Grosvenor Square, dyer and calico glazer.
Blackwell W. T., Hinckley, Leicester, hosiery manufacturer.
Sanderford Samuel Smith and Alexander Miller, Manchester, wool bleachers.
Leach J. and Son, Milton Mill, Bingley, and Bradford, manufacturers.
Whitaker T., Britannia Street, Leeds, cloth manufacturer.
Smith F., Crackenedge Terrace, Dewsbury, yarn spinner.
Jackson C. W., Raleigh Street, Nottingham, lace maker.
Clay, Cockcroft and Co., Hebden Bridge, cotton manufacturers.
Gatty F. A., Accrington, dyer and calico printer.

Middlebrook J., Ackroyd Street, Morley, Yorkshire, woollen manufacturer.
Hall T. and Sons, Batley, Yorkshire, woollen manufacturers.
Jackson F. S., Selby, fellmongers.
Lightoller F. J., Chorley, Lancashire, cotton spinner and manufacturer.
Jagger Bros., Ossett, Yorkshire, mungo manufacturer.
Tauer L., Camp Road, Leeds, mungo and soft rag merchant.
Mitchell A., Ossett, Yorkshire, rag and mungo merchant.
Hoyle J., Tottington, near Bury, Lancashire, cotton manufacturer.
Tattersfield G., Mirfield, blanket manufacturer.

Dividends.

Benson T. R., 13, Chandos Road, Stratford, Essex, shirt manufacturer; a final dividend of 1s. in the pound at the offices of D. R. Bryce, 1, Guildhall Chambers, Basinghall Street, London.

Dissolutions of Partnership.

Foster and Wright, Manchester, india rubber manufacturers.
Lightowler and Walsh, Scholes, near Cleckheaton, worsted manufacturers.
Wilkinson and Hey, Nelson, cotton manufacturers.
Woffendale and Bousfield, Liversedge, dyers and stovers.
Pilling J. and Luke Pilling, Bacup, waste dealers.
Rowland J. and Sons, Oldham, cotton spinners and manufacturers.
Ingham and Broadbent, Hebden Bridge, Halifax, cotton and cotton waste dealers.
Whitehead W. J. and Co., York, linen drapers, so far as relates to W. J. Whitehead.
Whitehead, W. J. and Co., York, linen drapers and woollen merchants, so far as relates to W. J. Todd.
Boulton J., and D. R. Thomas, Hanley, Stafford, linen and woollen drapers.
Brocklehurst W. C., C. Brocklehurst, W. B. Brocklehurst, A. J. P. Brocklehurst, Milk Street, Cheapside, London, silk manufacturers, throwsters, and spinners.
Tolson H. and Co., Bradford, stuff manufacturers.
Thornely and Pownall, Liverpool, cotton brokers.

Bills of Sale.

	£	s.	d.
Walker L., Hull, and Cottingham, near Hull, wool broker	195	0	0 &c.
Maden W., Guildford Street, Rochdale, cotton waste dealer			indemnity.
Simms G., Spring Gardens, Stockport, cotton waste spinners	80	0	0
Cooper J., Napier Street E., Coppice, Oldham, velveteen weaver	100	0	0
Garrett H., Moreton-in-the-Marsh, wool, &c. merchant	258	6	0 ab.s
Goldstine I., 7, William Street, Marylebone, tailor	30	0	0
Haigh R., Longwood, Huddersfield, commission weaver			conveyance on
Haigh A., Lindley, Huddersfield, commission weaver			securing com.
Spill H., St. James Street, Walthamstow, waterproof clothing manufacturer	60	0	0 inv.
Moon W., The Green Bottom, Guiseley, weaver, &c.	56	0	0

PATENTS.

Specially compiled for "THE JOURNAL OF FABRICS AND TEXTILE INDUSTRIES" by G. G. M. HARDINGHAM, C.E., Fellow of the Institute of Patent Agents, 191, Fleet Street, London, E.C.

Applications for Letters Patent.

	No.
Braiding machines. W. Ashton, Manchester	12th Mar. 1297
Bearings for the spindles of spinning and twisting frames. D. Skeoch, Stewarton, Ayr	27th Mar. 1544
Card raising machines for finishing blankets, &c. H. Morton of Morton and Son, Heckmondwike	1st Mar. 1105
Cop retaining spindles. A. J. Boulton (W. T. Coggeshall, and J. E. Rice, Hovell, Middlesex, Mass., U.S.A.)	6th Mar. 1194
Drying cylinders. J. Horrocks, Worsley	8th Mar. 1253
Finishing lace. L. Lindley, Nottingham	17th Mar. 1418
Fulling machines. A. Roger, Boulevard, St. Dennis	28th Mar. 1572
Holder for ribbon and similar fabrics in the roll. A. M. Clark (J. Millette, Wenamac County of Palashi, Indiana, U.S.A.)	27th Feb. 1067
Hackling machines. J. C. Newburn, (J. Cordon, Lille, France)	12th Mar. 1300
Jacquard apparatus. J. Chapman, Nottingham	24th Mar. 1531
Indigo (a substitute for). W. H. Spence (A. F. Chesnais, 128, Rue du Renard, Rouen)	29th Mar. 1589
Knitting machinery. F. and S. Keywood, Notts.	24th Mar. 1527
Looms. G. H. Hodgson, Bradford	10th Mar. 1281
Looms. T. Hollingworth, Blackburn	12th Mar. 1307
Looms. J. Hodgson and S. Greenwood, Bradford	24th Mar. 1534
Looms. T. Taylor and J. Whittaker, Oldham	24th Mar. 1536
Looped fabrics (machines for). H. H. Lake (Continat et Cie Froyes, France)	15th Mar. 1307
Lap forming machines. J. Walker and T. G. Beaumont, Dewsbury Mills	21st Mar. 1486
Manufacture of velvet rep and such like fabrics. J. Imray, (A Duquesne, Paris)	8th Mar. 1259

Measuring and marking lengths of fabrics. C. A. Weckbecker and L. Schwabe, Manchester	16th Mar. 1402
Producing figured designs. C. D. Abel (La Societe a habrosse et J. Richard, Sedan, Ardennes, France)	27th Feb. 1049
Printing fabrics. C. J. Appleton, Lower Broughton, Salford	2nd Mar. 1130
Process and apparatus for dressing stiff net. G. Marwitz (G. H. Gruner, Dresden)	3rd Mar. 1148
Pricking or piercing jacquard loom cards. P. A. Comte de Spane, Paris	14th Mar. 1344
Preparatory treatment of flax, &c. J. R. Dry, 25, Oriental Street, London, E.	15th Mar. 1388
Preparing fibres. L. A. Groth (C. A. Kræmer, Berlin)	19th Mar. 1436
Picking motion for looms. H. Yates, Manchester	19th Mar. 1445
Pattern multiplier. H. Walbrodt and W. Wolff, Nieder Schonweid, Germany	22nd Mar. 1517
Rings for ring spinning frames. A. M. Clark, (J. Jaquith, Maysville, Kentucky, U.S.A.)	6th Mar. 1212
Ring and traveller spinning and twisting frames. A. M. Clark (J. J. Bourcart, Zurich, Switzerland)	16th Mar. 1413
Ring spinning frames. J. and W. Monks, and W. J. Redman, Bacup	22nd Mar. 1500
Ring spinning frames. A. M. Clark (J. Bourcart, Zurich, Switzerland)	24th Mar. 1540
Ring spinning machinery. E. de Pass (J. Imbs, 17, Boulevard, St. Martin, Paris)	29th Mar. 1588
Spinning frames. A. Gilmore, Keady, Armagh	27th Feb. 1047
Spools and bobbins. F. Wirth (A. Abegg, Laufeburg	2nd Mar. 1133
Screw gill boxes or hackle frames. G. W. Douglas, Bradford	7th Mar. 1228
Shuttle-box operating mechanism for looms. J. Brownville, Glasgow	8th Mar. 1257
Spinning and twisting machines. E. Morley, Halifax	12th Mar. 1306
Spinning machines. L. A. Groth (J. Bourcart, Zurich)	19th Mar. 1435
Sectional warping machines. H. Yates, Manchester	19th Mar. 1444
Spinning and doubling machines. A. Higgins, Salford	20th Mar. 1466
Stopping gear for looms. W. H. Beck (W. Dawson, Paris)	21st Mar. 1476
Shuttles. T. Brookes and T. Tweedale, Crawshawbooth, near Rawtenstall	28th Feb. 1573
Twisting or doubling apparatus. J. Farrar, Halifax	12th Mar. 1312

Grants of Provisional Protection for Six Months.

711	721	740	743	761	763	774	783
790	806	817	820	932	955	983	986
1006	1011	1031	1047	1049			

Notices to Proceed.

(Notice of opposition to the Sealing of a Patent must be given within Twenty-one days of the Notice to Proceed being advertised in the Commissioners of Patents Journal.)

Bobbins. E. Tweedale, Accrington	31st Oct. 5175
Bobbins. H. Southwell, Heywood, and W. H. Dawson, Manchester	23rd Jan. 363
Bleaching, &c. J. Gibson, jun., Mottram, and J. Platt, Salford	8th Nov. 5366
Bleaching and finishing. J. B. Thompson, New Cross	3rd Feb. 595
Bobbins. J. Clayton, Bradford	6th Nov. 5286
Fleece Dividing machines. L. A. Groth (J. H. Gilljam, Lamensberg, Aix la Chapelle, France)	24th Oct. 5063
Finishing machinery. J. Littlewood, Newsome, near Huddersfield	9th Nov. 5354
Knitted looped fabrics. H. Kiddier, Nottingham	14th Feb. 806
Knitting machines. F. Johnson, Nottingham	23rd Feb. 983
Knitting machines. H. J. Allison (C. H. Carter, Colborne, Ontario, Canada)	3rd Jan. 44
Looms. G. S. Snowden and O. Ball, Bradford	17th Nov. 5475
Looms. C. Keighly, Burnley	25th Nov. 5608
Mules for spinning and twisting fibres. J. E. Heppenstall Milnsbridge	17th Nov. 5478
Printing calico. &c. C. Hindle, Rawtenstall, and J. H. Canavan, Salford	19th Feb. 901
Pirn and spool winding machines. P. H. Marriott and J. Hall, Stockport	23rd Feb. 986
Piled fabrics and method of weaving. J. Holt, Bolton	27th Nov. 5630
Spinning, doubling and twisting. E. Rushworth, Idle, near Leeds	1st Nov. 5222
Spinning, doubling and twisting. H. B. Barlow (E. C. A. Masson, Paris)	3rd Nov. 5425
Shuttles. F. O. Schmidt, Berlin	13th Nov. 5413
Spinning frames (attachment for). A. Gilmore, Keady, Armagh	27th Feb. 1047

Twist lace machinery. G. Bentley, Nottingham	12th Feb. 761
Washing fabrics. A. Paterson, Belfast	30th Oct. 5146
Winding engines (brass bobbin). J. Mosley, New Basford	14th Feb. 817

Patents Sealed.

4333	4339	4360	4361	4371	4384	4398	4477
4500	4557	4603	4649	4720	4724	4753	4843
4867	6016	6088	6093	6158	(All of 1882)		13
127	150	160	267	(All of 1883).			

Patents on which the Stamp Duty of £50 has been paid.

Thomas Coltman, Leicester, "Improvements in machinery and apparatus applicable to folding, doubling and twisting machines"	1st March, 1880 891
John H. Johnson, 47, Lincoln's Inn Fields "Improvements in dyeing, printing, and marking textile fabrics and materials"	30th April, 1880 1771
William Greatwich, Kidderminster, "Improvements in machines for reeling and twisting yarns and other fibrous materials"	18th March, 1880 1158
Arthur W. L. Reddie, London, "Improvements in knitting machinery." A communication.	3rd March, 1880 942
William Cotton, Loughborough, "Improvements in knitting machines"	6th March, 1880 989
Christopher Cross, Manchester, "Improvements in weaving 'loongees' and other ornamental fabrics, and in apparatus employed therein"	9th March, 1880 1027
John King, Glasgow, "Improvements in or connected with the printing or dyeing of and steaming cotton fabrics"	11th March, 1880 1062
Charles F. Leake, Staines, "Improvements in rolling or spreading plastic compositions upon fabrics for the manufacture of linoleum and other floor-cloths. and for other purposes"	15th March, 1880 1111
Samuel Thacker, Nottingham, "Improvements in the manufacture of knitted or looped fabrics, and in machinery or apparatus employed therein"	10th March, 1880 1042
James Marsh and James A. Marsh, both of Ashton-under-Lyne, "Improvements in apparatus employed in the spinning of fibrous materials"	17th March, 1880 1152
Angustus Büdenbänder, 61, Aldermanbury, London, "Improvements in machinery combining braid and lace machines." A communication.	23rd March, 1880, 1236
Ernest de Pass, 68, Fleet Street, London, "Improvements in circular knitting machines with self-acting needles." A communication.	25th March, 1880 1268

Patents on which the Stamp Duty of £100 has been paid

Thomas Unsworth, Manchester, "Improvements in laying the fibre of yarns of all descriptions in spinning, doubling and twisting, and dispensing with the necessity of gasing"	23rd March, 1876 1233
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Copyright of Designs.

(Registered during March, 1883.)

Class VI., Carpets.

394,749-64	Morton and Sons, Kidderminster.
395,058	James Humphries and Sons, Kidderminster.
395,442	James Humphries and Sons, Kidderminster.
395,801-802	E. Clarke and Sons, 143, Neate Street London, S.E.
395,839	Shepherd and Beveridge, Kirkcaldy, N.B.
396,143	J. Marsden, Varley Street, Oldham Road, Manchester.

Class XI., Furnitures.

394,612	Morris and Co., 449, Oxford Street, London, W.
394,637	Edwards, Cunliffe, Wilson and Co., 155A, St. Vincent Street, Glasgow.
394,638	B. Duckworth and Sons, 16, Turner Street, High Street, Manchester.
394,652-53	T. G. Hill and Co., 86, Major Street, Manchester.
394,963-64	Edmund Potter and Co., Manchester and Dinting.
395,207-209	S. Lawton, Cross Street, Middleton, Manchester.
395,288	F. W. Grafton and Co., 91, Portland Street, Manchester.
395,394	W. Rumney and Co., 53, Portland Street, Manchester.
395,395-97	S. Lawton, Middleton, Manchester.
395,616-17	Susmann, Simon and Co., 4, Cumberland Street, Manchester.
395,677	B. Duckworth and Sons, Manchester.
395,684-85	R. Dalglish, Falconer and Co., Manchester.
394,791	D. Lee and Co., Fountain Street, Manchester.

The Journal of Fabrics

AND

Textile Industries.

Vol. 3. No. 21.

MAY 12th, 1883.

Price 6d.

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Notices.

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The Publishers are open to receive from Designers, Original Designs of Carpets, Damasks, Tapestries, Linen, Cretonnes, &c., and such as are accepted will be published with the Designers name affixed. All Designs sent for approval must be 10 inches long by 7 inches wide for single page, and for double page, 16 inches by 10 inches, and must be accompanied by Postage Stamps sufficient to pay return Postage in case they are rejected.

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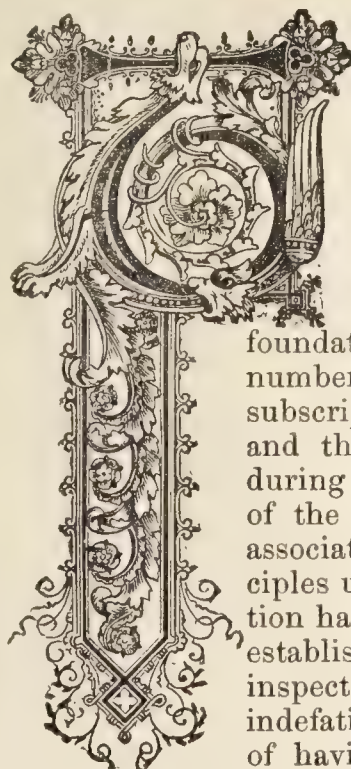
To prevent any misunderstanding, all Articles sent to the *Journal of Fabrics and Textile Industries* for publication, will be considered as offered *gratuitously* unless it is stated explicitly that remuneration is expected.

Readers are invited to forward items of interest to the Trades concerned.

The Proprietors will feel greatly obliged if any of their readers in making enquiries of, or opening accounts with Advertisers in this paper, will kindly mention the *Journal of Fabrics and Textile Industries* as the source from whence they obtained their information



The Manchester Steam Users' Association.



THE Annual General Meeting of the Manchester Steam Users' Association was held a few days ago. The Chairman (Mr. J. Ramsbottom, C.E.), in moving the adoption of the report said: The Committee had the usual account to give of the steady and satisfactory progress of the association. At no time since the

foundation of the association in 1854, had the number of members and the amount of their subscriptions, the number of boilers enrolled and the number inspected, been so great as during the past year—an unmistakeable proof of the growing importance and value of the association, and of the soundness of the principles upon which it was founded. The association had the credit not only of being the first to establish a principle of independent periodical inspection of land boilers, but, thanks to the indefatigable labours of their worthy president of having secured the passing of the Boiler

Explosions Act, a measure which, whilst it was in no way unduly hard upon the steam user, was calculated to ensure a more satisfactory inquiry into the causes of boiler explosions, and consequently to save life. With regard to the bill which

had been brought in by Mr. Broadhurst and read a first time, he found that it nowhere explained what the nature of the examination of "persons having charge of the working of steam boilers on land" was to be, and it might therefore include qualifications altogether foreign to the duties of a fireman or engine attendant. The committee of that association quite approved of the idea that every man before being entrusted with the charge of a boiler or an engine should be strictly examined, but thought that his employer, who should be responsible to the public, ought to be his examiner, and not a Board of Trade official. A portion of the funds of the association had been devoted to experiments upon what was generally known as the "Lancashire boiler," and the association might take credit for having established this as a standard type of land boiler, which, taken in all its features, might fairly be considered superior to any other at present known. The question of smoke prevention had also been carefully considered, together with the relative merits of mechanical and hand firing; and the conclusions arrived at were that as regarded economy the two modes of firing gave practically the same results, and as regarded smoke prevention, it was believed that all that was required to effect this was a reasonably fair draught, the admission of air through a hollow bridge, and at intervals at the fire door, and a careful stoker. Incrustation had an important bearing upon the economical working of boilers. Soda ash, of good quality, should in most cases be adopted, about 3lb per day for an ordinary boiler; and it should be pumped in along with the feed water. When this was done it was necessary that the blowing out should be carefully attended to, in order to prevent priming. In cases where the incrustation consisted largely of carbonate of lime, the true remedy appeared to be the Porter-Clark process. The experiments which they were making upon the behaviour of "red-hot" furnace crowns, so far as they had gone, appeared to show that a furnace crown might be so overheated as to melt lead, even when loosely attached to it in the shape of a flange, and having, therefore, a film of superheated steam between the lead flange and the crown plate; and yet that when water was suddenly thrown upon the crown plate, so far from their being an enormous quantity of steam suddenly generated, and so bursting the boiler, the pressure gauges were scarcely affected. A question was forcing itself upon owners as to the material of which the boilers should be constructed, whether iron or steel. There was steel and steel. Lengthened experience seemed to show that steel, if carefully made, would gradually take the place of iron in the construction of boilers, especially if regard was had to the fact that ductility was of much more importance than a high tensile strength. Mr. Schofield moved the following resolution, which was carried:—

"That this meeting congratulates the association on the passing of the Boiler Explosions Bill during the last session of Parliament, considering that while the measure cannot be objected to by any careful steam user, it is calculated to save human life and to disseminate practical and valuable information with regard to boiler construction, which must prove of commercial advantage both to boiler owners and boiler makers; while, in addition, this meeting regards with considerable satisfaction the fact that this association, which was the first public body to establish on a practical working basis the simple but efficient principle of independent periodical inspection, has also been the first to secure a legislative enactment for preventing steam boiler explosions on land, with a view of reducing the lamentable sacrifice of human life and destruction of property entailed thereby. Further, this meeting tenders to the president (Mr. Hugh Mason), its most hearty thanks for his perseverance and skill in passing the bill through Parliament, and sincerely regrets his absence through illness on the present occasion; and, whilst offering its warm congratulations on his recovery to health so far, it trusts that he will soon be completely restored and enabled again to preside at the meetings of this association, as well as to continue to prosecute those numerous undertakings for the benefit of the public in which he has so long and successfully been engaged."

Mr. Schofield afterwards said they did not measure the success of the association by number of boilers or dividends, but by the extent to which they were carrying out the principle which guided their practical operations. That principle was to do away with boiler explosions, which they found were avoidable, whilst at the same time they prevented irritation through any unnecessary Government interference or regulations. Mr. Schofield proceeded to criticise the bill brought in by the member for Stoke-on-Trent, and read a telegram from Mr. Hugh Mason, stating "Mr. Broadhurst's bill is mischievous, and you should strongly oppose it."



The Alizarine Industry.



T a meeting of the Manchester section of the society of Chemical Industry held last week, Mr. Ivan Levinstein described the history and progress of the manufacture of alizarine, from which are produced fast red, purple, brown and black dyes. He said alizarine was, until very recently, made only from the root of the madder plant, of which the yearly crop was 70,000 tons, and represented an annual value of £3,150,000, of which the United Kingdom consumed 23,000 tons, representing a value of nearly £1,000,000. Madder is now no longer grown for this purpose. The German chemists found that alizarine produced from madder, in undergoing certain treatment, gave a substance identical with anthracine, one of the constituents of coaltar, and in 1869 the same chemists announced to the world that they had accomplished the synthesis of alizarine from anthracine. The effect of this discovery was to throw madder out of cultivation. Mr. Perkin, an English chemist, and Messrs. Graebe and Liebermann, German chemists, almost simultaneously applied for patents in 1869, in England, and as their methods were nearly identical they arranged priorities by the exchanging of licenses. The German license became the property of the Badische Aniline Company, and the English license became the property of the predecessors of the North British Alizarine Company. These patents expire in about two months, and the lecturer explained that an attempt made by the German manufacturers to further monopolise this industry (even after the expiry of the patent) proved abortive. He also stated that alizarine, 20 per cent quality, is sold to-day at 2s. 6d. per lb., but that if the price were reduced by one half there will still be a handsome profit to makers, and that the United Kingdom is the largest consumer, absorbing one-third of the entire production, and that England possesses advantages over all other countries for manufacturing alizarine—first, by having a splendid supply of the raw material, anthracine; secondly, cheaper caustic soda in England than in Germany by fully £4 per ton; thirdly, cheaper fuel; fourthly, large consumption at our own doors; and, fifthly, special facilities for exporting. The advantages derived from the development of the alizarine manufactured here, it was stated, will benefit other collateral industries, such as the manufacture of soda, of ordinary sulphuric acid, bichromatic, and chlorate of potash, articles used in this manufacture. The lecturer considered that the difficulties attending the manufacture of alizarine were now overcome, and with sufficient capital and competent chemists English manufacturers must be successful. He then proceeded to explain the source from which nearly all the artificial colouring matters are derived, viz., gas tar; showing the principal products of this wonderful complex mixture, of which one is anthracine. Alizarine manufacturers originally found scarcity of anthracine, at present the supply is in excess of the demand, and the price during the last 18 months has fallen from 3s. 6d. to 1s. per unit, and the probabilities are that the supply will increase. The quantity of gas tar now obtained the lecturer estimated at 500,000 tons per annum, and the coal carbonised for gas making 10,000,000 tons. This quantity of tar suffices to produce 9,000 tons of 20 per cent alizarine. The lecturer then reviewed, in case of an increased demand for anthracine, the probable new sources of obtaining increased supplies of coal tar:—(1) The destructive distillation of petroleum; (2) coke ovens and blast furnaces; (3) the carbonisation of coal for general manufacturing purposes, using the coal and gas as fuel, and giving tar, benzine, and ammonia as residues; and (4) distillation of coal with the object of obtaining the principal products, tar and benzine, and as the residual product, gas. This part of the lecture was important to dyers and printers, the lecturer showing also, in a very interesting way, in what manner manufacturers may very considerably economise their consumption of coal. The lecturer explained that while from one ton of coal there was obtained on an average about 17oz. of benzine, by the new method about 30 times that amount can be got from the same quantity of coal. He also considered in great detail the different processes of the carbonisation of coal, and of increasing the production of the different important residual products of gas, tar, and also the best method of extracting the benzine. He showed samples of benzine which he produced from gas obtained at the Rochdale Road Gasworks, and, further nitro-benzine, aniline, and colouring matters, which he had made from this gas benzine. The lecturer also discussed the effect of the probable increased production of tar, ammonia, benzine, &c., as affecting gas companies, and said it was anticipated they either would raise the price of gas or change the present system of manufacture, which he considered probable. The enormous increase in the production of ammonia, of which the larger portion at present, as sulphate of ammonia, was used as a fertiliser, would no doubt considerably reduce its value. It might even replace soda for many purposes, and thus react on our alizarine industry. He then proceeded to consider the manufacture of alizarine purpurine, and divided its manufacture into four stages: 1, the purification of crude anthracine; 2, the conversion of the purified anthracine into anthraquinone; and 3, the production of sulpho acid of anthraquinone and the conversion of this sulpho acid into alizarine and purpurine. This part of the lecture comprised a detailed explanation of the various kinds of apparatus required to be used, which were beautifully got up, complete working models having been prepared for the occasion. The lecturer was of opinion that large consumers would be benefited if makers would offer for sale only three distinct colouring matters—iso or

anthrapurpurine, and flavo-purpurine, leaving it to the dyers and printers to produce for themselves the intermediate shades by mixing the three colours; and he showed that by reason of the fastness of the shades produced by these colouring agents, varying considerably, the blue shade (alizarine) being much faster than the orange shade (flavo-purpurine) consumers were in many instances losers by using mixtures of alizarine and flavo-purpurine. In the course of the lecture many interesting specimens of various products were produced and dilated upon, the lecturer fully describing the process of purifying the crude anthracine and of the conversion of the purified anthracine into anthraquinone.

The Canadian Tariff.

The following is among the list of the principal changes in the Canadian tariff proposed by Sir Leonard Tilly in his recent Budget statement:—

FREE LIST.—Aniline dyes—add in bulk or packages of 5 lb. or over; celluloid, in sheets—add lumps or blocks; colours—dry metallic oxides, cobalt—zinc and tin; dye—jet black; hatters' plush of silk or cotton; platinum wire; wire of brass or copper, round or flat; wire of iron or steel, galvanized or tinned, or No. 15 gauge or smaller; steel railway bars or rails, fish-plates, and in sheets for manufacture of screws.

DECREASED DUTIES.—On the following articles the duty has been decreased, and the rate is as follows:—Buckram, 10 per cent.; button covers, 10 per cent.; coal dust, 20 per cent. *ad valorem*; lamp black and ivory black, 10 per cent.; leather, lamb, sheep, buck, deer, elk, and antelope, dressed and coloured or not, 10 per cent.; kid, tanned or dressed and coloured or not, 15 per cent.; oil or enamelled cloth for trunk and valise makers, 15 per cent.; paper, union collar cloth, 5 per cent.

SYNOPSIS OF TARIFF RESOLUTIONS.—Cloth of other material than cotton or woollen, made uniform, 30 per cent.; india-rubber clothing, made waterproof, 35 per cent.; woollen hosiery, same as woollen clothing; dress and costume cloths, under 25 in. wide and weighing no more than 3 oz. per square yard, 20 per cent.; yarns of wool or worsted, 2-ply or more, different colours combined, or mohair yarns, white or any colours imported by manufacturers, 20 per cent.

INCREASED DUTIES.—On the following articles the duty has been increased:—Aniline dyes, in less than 5 lb. packages, 10 per cent.; bed comforters and quilts, 27½ per cent.; boot and shoe laces, 30 per cent.; braces and suspenders, 30 per cent.; cotton, printed or dyed, 27½ per cent. on 1st January, 1884; hair cloth, 30 per cent.; jute carpeting, matting, or mats, 25 per cent.; *ad valorem*; lamp wicks, 30 per cent.; wall and fancy papers, 30 per cent.

The Woollen Industry in the United States.

There has recently been some talk among the woollen manufacturers of the United States of closing their mills for two months, to relieve the market of an overstock of woollen goods. The margin on woollen goods at the present time is very small. Several auction sales have taken place in New York of accumulated stocks, which have been attended with disastrous results, the goods in no case bringing what the raw material cost before it was worked. Mills that are running on cassimeres are getting ready to change on to flannels and other classes of woollen goods, thinking there is a larger margin and less risk than on goods of their former make. Mills on flannels, in some instances, are trying to find a class of goods they can make where there is a larger margin, every manufacturer thinking that perhaps his neighbour is making more money than he is; but the truth is, there is little margin on any class of woollen goods being made to-day. There are now about 1,800 sets of woollen machinery running in this country, and by July 1st 100 sets more will be added. Emigration does not benefit the woollen interest so much as it does the cotton, as the emigrants who come here either wear a cheap class of goods, made entirely of cotton, or else a low grade of woollen, of which there is little or no wool put in. The successful manufacturer will be the one who takes as little risk as possible, keeping his expenses down to the lowest possible point, making a staple, honest article. The American people have learned that these cheap shoddy goods are the dearest, and are wearing them less each year.

Japanese Figured Fabrics.

The processes of printing on fabrics, and the means by which figures are produced on both cottons and silks, without the aid of the loom are somewhat various in Japan. With the simple methods of block printing they are perfectly familiar, but of those processes which are mere modifications of our own I need not speak. The methods which I am about to describe are those by which the greater portion of Japanese fabrics receive their figure. Japanese towels, as I have before said, are strips of a common cloth or calico, about three feet in length by one foot in width, which always bear some simple pattern or curious device, and while they sometimes vary in colour, almost nineteen out of twenty are of blue with a white figure. All common fabrics, such as towels, coolies' dresses, &c., seem to be figured by one of the following processes:—The first method consists in preparing two blocks, the one of which is simply a heavy piece of wood with a perfectly smooth face, while the other has the pattern which is to be given to the cloth cut into its surface—the pattern is thus wrought in *intaglio* upon it. From the deeper portions of the sunken figures holes are bored through the block to the outer surface, where they are enlarged into funnel-shaped tubes. In order that the fabric be figured it is stretched over the smooth surface of the plain block as upon a table. Upon this the figured block is now inverted. Thus the fabric lies between the surfaces of the plain and figured wood. Pressure is now employed so as to bring the surfaces of the blocks as near together as possible, when a dye is poured through the funnel-shaped holes, and is thus brought into contact with the fabric wherever the block has been hollowed. In a few seconds the fabric has become saturated with the dye, when the blocks are inverted, all the spare fluid poured off, and thus the fabric has received pattern, for the pressure was sufficient to prevent the “running” of the dye, and thus the obliteration of the figure. In some cases a dyed fabric receives a white pattern by a modification of this process, in which a weak acid, or some other fluid which will destroy or “discharge” the dye already existing in a dyed cloth, is poured through the holes in a block. It is in this way that many of the towels are figured. Although I have described this method of producing patterns on cloth it is by no means unknown in our own manufactures, but I believe that it is now almost abandoned in our calico printworks. It being, however, one of the simple processes by which cottons are figured in Japan, I have thought it desirable to mention it. Another process by which cotton fabrics receive pattern is that of using a common stencil plate formed of lacquered paper, but by this simple means two kinds of effect are produced. In the one case the pattern is simply stencilled, a dye being used instead of paint; while in the other case the pattern is stencilled with a kind of paste, or “resist” (a substance that protects cloth from dye when brought in contact with the latter). Whenever the pattern is placed upon the fabric in “resist” the cloth is afterwards immersed in a dye vat, and then washed, by which processes the ground of the cloth first receives colour, and then the “resist” is washed away, leaving a white pattern upon a coloured ground. There is another modification of this process, by which work is done in the following round about manner. Let us suppose that a little figure—say a leaf—has to be distributed in green colour over the surface of a fabric a thing which could obviously be done by the use of a small stencil plate and a brush with a little green colour. But the Japanese have a labour expending process (not a labour saving method) by which they achieve this result. They cut a series of leaves, all of the same shape and size, in paper, and instead of using the sheets from which the leaves have been cut as so many stencil plates, they take these paper leaves themselves and arrange them upon the cloth in the manner required. Now holding a leaf with a finger with the left hand, and with a sort of trowel in the right, on which rests a quantity of “resist,” they so spread this “resist” that the leaf is buried as well as the cloth intervening between the leaves. Leaf after leaf is covered in the same manner, care being taken that the “resist” does not get under the edges of the paper. Each leaf, which is just visible through the “resist” with which the fabric is now covered, is picked up by a needle point; hence, at these particular places the fabric is clean. The “resist” is now dried, the fabric is dipped in a

green dye vat, by which the leaf-like spaces assume their colour. The cloth is now exposed to the steaming process which is so familiar to us, and is then washed. Thus the “resist” is removed, and we have a series of green leaves figuring a white surface. I saw a copy of a dragon cut in paper which was used while in Japan in the manner of the leaf just spoken of. *Japan:—Its Architecture and Art Manufactures*, by Christopher Dresser, Ph. D., F.L.S., &c.

The Employment of Ceruleine in Dyeing.

The attention of the technical world was drawn some four years ago, by M. Durand, of Mulhouse, to the employment of Ceruleine in dyeing, but the use was at that time somewhat restricted, by its high price, to the dyeing in dark green of expensive cloths adapted for ladies' wear, or of yarns for the manufacture of fancy goods. M. Amaury de Montlaur has summarised the principal results bearing on the subject, in a letter addressed to the *Moniteur Scientifique*, which results have been arrived at by recent experience. Great improvements have lately been made in the mode of manufacture of Ceruleine, which have tended materially to reduce its cost; so that in its use, the maximum cost per pound of wool does not exceed that of other fast dyes. As to the general properties of Ceruleine, it is remarked that when the washing has been properly carried out, it does not fade even by contact with soap. M. de Montlaur's attention is now being devoted to the combinations of indigo and ceruleine, more particularly in conjunction with chrome mordants.

The following are the processes for wool and cloth dyeing:—*Wool Dyeing*.—The wool is placed in a bucket with its own weight of bi-sulphite of soda (density 1.39) and there is added one-tenth of the weight of ceruleine of zinc in powder. The mixing should be thoroughly done, and the vessel left covered for about two hours. The bath is afterwards added to and the temperature is raised. The wool can be mordanted with alum, or with sulphate of alumina and cream of tartar as for madder. It is remarked that chrome mordants are superior in their effects in the fineness and intensity of shade. The wool is introduced into the bath (which should have a brown shade with a slight orange tint). If the bath is green, and if the wool assumes a green shade in the bath, there must be added a further quantity of bi-sulphite with one-tenth of its weight of zinc. The wool is best placed where the ebullition is least strong, and the vessel should be covered with boards to keep out the air. The wool is left until a sample, after being let drain and being in the air ten minutes, has acquired the shade wished for. The bulk is then taken out and let drain as it comes out of the bath. It is then placed in thin layers and left as open as possible, so as to facilitate the oxydation. It should be turned over several times at some hours interval. After twelve to fifteen hours it can be washed, but it is best allowed to dry and taken away to be worked. It should then be washed. This operation increases the brilliancy of the shade in a considerable degree, it is asserted. *Cloth Dyeing*.—It is remarked that this process is not suitable for close made tissues, such as army cloths, which are more advantageously dyed in the wool. In lighter cloths it is recommended, for the rapid production of dark shades, to put a greater quantity of colouring material (which can afterwards be recovered by filtration) in cases where the suitable mechanical appliances are absent, and only one operation is carried out. This is considered preferable to allowing an ebullition of too prolonged duration which is hurtful to the cloth. In taking out the cloth from the bath it is important to drain it rapidly and pretty completely, otherwise the reducing liquid filters across the tissue and would produce stains, particularly if there has been an excess of bi-sulphite. The cloth is stretched out so that the oxydation of the ceruleine may be completely affected. As the air penetrates less rapidly into the fibres than would be the case with wool, the tissue must be let dry before being washed. After that operation it can be left an hour or less in a hot soap solution (at 120 to 140 deg. F.) composed of 4½ lbs. to 22 gallons of water. A thorough washing follows. It can then be passed through sulphuric acid at 2 or 3 deg. B. before being

again washed. The brilliancy of the tissue which has been affected by the dyeing is thus restored, and the process of finishing is thereby facilitated. This process is not considered, as a rule, to be applicable to yarn dyeing.

The Opening Up of New Markets.

Dealing with Mr. Colquhoun's new work, "Across Chrysè," the *Daily News* refers to the resources of the region towards which French operations are directed. Tonquin, it says, is the northern-most province of Annam, and lies immediately south of Yunnan. Though it has a certain importance of its own, its chief value to the French is that they hope to make of it a gate to China, and thus to acquire for themselves the best part of the available Chinese trade. Mr. Colquhoun traversed from east to west the southern part of Yunnan—that is, the very districts the French hope to open up, and it is his opinion that their hope is vain. It may be freely admitted that it is highly desirable to open up new markets for our trade. The more civilised countries are rapidly developing a manufacturing industry which will supply their own demands, and therefore, if we are to retain adequate markets to give room for the growth of our industries, we must open up new countries. But after all there are higher duties of Government than the providing of new markets for our goods. It is obvious that the railways proposed by Mr. Colquhoun, assuming them to be practicable from an engineering point of view, could not be built and maintained without the annexation of independent Burmah and the independent Shan States. British investors would certainly not provide funds for building such railways if they were to be exposed to the mad caprices of King Theebaw and to the effects of the intestine quarrels of barbarian tribes. Neither would the Indian Government on its side be justified in spending the money of its subjects without full guarantee that the lines it built could be fully protected, and would offer some reasonable prospect of paying. Before finding the money, then, for building these proposed lines, it would be necessary to extend our Burmah possessions up to the western frontier of China. But the Indian Government, we fancy, and the British public will hardly consent to increase their Indian responsibilities for the sake of opening up new markets in China, however valuable these markets might be, supposing they could be peacefully won.

Lace: Its History and Manufacture.

The first of a series of lectures on Lace; its history and manufacture was given at the Nottingham University College a few days ago by Mr. E. Doughty. The Mayor, who presided, said that it gave him great pleasure on the occasion to introduce Mr. Doughty, who had promised the committee to give them three lectures on a subject which must be of the utmost interest to every one engaged in the staple trade of the town. He was glad to see present so many who were engaged in that trade, believing that not only would the lectures prove attractive, but that they might in the end advantage those who listened. At the close of that evening's proceedings it was not intended to move a formal vote of thanks to Mr. Doughty. He had no doubt that all then present would be anxious also to be present at the second and third lectures, after which their appreciation would doubtless be shown. The lace trade of Nottingham, he felt, had been developed by the wonderful ingenuity of the people of the town. It was gratifying in this connexion to find that the Government had introduced a Bill in Parliament with a view to amend the patent laws of the country. Should such a Bill become law he felt that it would be of great benefit to the country generally, since their artisans would be enabled to protect their inventions at a cheaper rate, and with increased facility. Mr. Doughty stated that in attempting to bring before them an historical account of the invention and manufacture of lace, he proposed in that lecture to deal with lace made independently of machinery. For the present he proposed to speak only of that which was made by hand, and which they always spoke of as the real lace. The meaning and probable derivation of the word lace having been referred to, it was ob-

served that at about 1600 A.D. the period called the Renaissance commenced. Then they found a close and sympathetic union existing between the fine arts and manufacturers of all kinds. Considering the article they knew as lace, no doubt the art of making network came from the East, that spread gradually over every part of Greece and Italy, the isles of the Ægean Sea, the islands of the Mediterranean, and thence over Spain, France, and Germany. In all these countries, it was pointed out, the results were appropriately characteristic, as was exemplified. Genoa and Venice for ages were famous for the exportation and manufacture of point or needle lace, and the art of making it extended to France, the Netherlands, and to England. In the days of feudalism it was cultivated in almost every castle and convent. At one period, it was rather curious to observe, English point lace was preferred to that made on the Continent. In France and Flanders the material formerly used for point lace was almost entirely linen thread, Belgium and Holland being celebrated for producing the finest flax. Cushion lace was said to have been invented by a Saxon lady. However the fact, it was cheap as compared with point laces; and as the art of making it was less difficult, it soon became a popular manufacture. In Saxony many males as well as females were employed in making a coarse kind of cushion lace called Torchons, and it had been remarked that the lace made by men was firmer and of superior quality to that made by women. Of laces, Alençons in general estimation held the first place. France was pre-eminently the country of the real lace manufacture. Chantilly, Valenciennes, and Brussels lace were next alluded to and illustrated by means of a screen upon which representations were thrown by means of the limelight. It was afterwards shown that foreign workers in lace had been prevented by Elizabeth from settling in England, notwithstanding Elizabeth's lavish use of the article. The effect of the revocation of the Edict of Nantes in spreading the manufacture of lace was touched upon, as also former smuggling of lace in consequence of its value; and the decoration of dead bodies therewith. Real lace was made in the English counties of Bedford, Buckingham, and Devon, although to some extent adjacent counties were engaged. The making of lace in Scotland and Ireland came in for notice, and Irish crochet laces were illustrated and lucidly explained. It was to be hoped that the exhibition of Irish lace to be held during the coming summer might revive this branch of Irish industry by bringing it to the front. He questioned whether patriotic Irishmen might not, by the purchase of machinery for embroidery, do more for the Irish industrial classes than would an exhibition of Irish lace held under any auspices. Mr. Doughty, in the course of a lengthy and most interesting lecture, was frequently and cordially applauded.

The Mackintosh Tapestries.

What we believe to be the first tapestries that have been made within sound of Bow Bells since the extinction of the Mortlake works in Charles II.'s time have recently been completed by Messrs. Trollope and Sons, at Halkin Street West, Belgrave Square. At Windsor, as is well known, the attempt to revive this art has lately been made with some success; and now it has been made, on a large scale and with important results, in London itself. A series of four large panels is now on view at Messrs. Trollope's, made for The Mackintosh, and intended for one of the principal rooms at Moy Hall; the designer having been Mr. Sacheverel-Coke, working under the direction of Mr. G. T. Robinson, F.S.A. The series represent four famous incidents in the history of the Clan Chattan, of which The Mackintosh is the chieftain—"The Battle of the Clans," described by Sir Walter Scott in the "Fair Maid of Perth"; "The Treachery of the Comyns"; "The Tragedy of Bog-of-Gight"; and "Lady Mackintosh Raising the Clan for Prince Charles Edward in 1745." The treatment is throughout pictorial and realistic; for, as the same room is to hold four panels which cover a space of more than four centuries, it was thought better to deal with all four in one style, and that a comparatively modern one. The result ought, on the whole, to gratify both the designers and the executants. Tapestry never looks its best till

two or three centuries have mellowed it; and for our own part we prefer the angular and conventional manner of the early Flemish work to the later Gobelins, upon which these products of the Halkin Street looms are modelled. But it is impossible to mistake the technical excellence of Gobelins work, and that excellence is fully shared by the "Mackintosh Series," which only require the softening influence of time to make them as pleasant for decorative purposes as they are admirable in workmanship.—*Times*.

The Textile Fabrics at the South Kensington Museum.

THEIR VALUE TO MANUFACTURERS AND DESIGNERS.



THE authorities at the South Kensington Museum have lately opened two lofty courts (one at each end of a long corridor), which have recently been completed by Her Majesty's Office of Works. Here, after some years of obscurity and dispersion, the collection of textile fabrics, than which, as a whole, possibly no finer exists, is to be exhibited. The entire collection includes many examples of carpets, tapestries, laces, embroidery, &c., which force of circumstances has hitherto distributed all over the Museum. The *Times* in giving a description of the courts says: "Without arrangement to give a distinct purpose of instruction, museum collections necessarily fall into an incomprehensible and chaotic condition." It is to be hoped that under the new arrangement, the fabrics will be the means of giving thorough instruction to those who view them in a practical manner, and more especially to manufacturers and designers of textiles.

The portions of the textile collections which have been rearranged consist principally of woven fabrics. Fragments of silken and other textures have been mounted in frames, and are displayed upon screens. The technical features of these specimens—that is to say, the character of the materials and the methods of using them—may, in a measure, be studied; but full information in this direction cannot be acquired from inspection of samples. Their true value, perhaps, lies in patterns and colours. These are replete with interest. The use of symbols, which shows the variable influences of early religious doctrines upon the minds of peoples of different races, is prominent in ancient design and scarcely has a parallel in modern works. Symbolism in design is almost extinct. The sacred tree, the bursting fruit, the honeysuckle or spreading flower, the pomegranate, all are symbols used in ante-Christian epochs. But modifications of them for decorative effect appear in costly fabrics from Sicily in the twelfth and thirteenth centuries, from Spain and Italy in the fourteenth and fifteenth centuries, from France in the seventeenth and eighteenth centuries. As symbolism in design declined, ingenuity in craft seems to have progressed. Very delicate weavings in silk are here shown as emanating from Byzantium, and a large share of the interest in textile fabrics centres itself in the gradual employment of silk in Europe. Oriental and Byzantine silks are antecedent to similar Sicilian fabrics. It is well-known from Pliny that silken webs were made at the island of Cos. Weavers appear to have more largely used silk in their looms at Corinth, Thebes, and Argos in the sixth century, soon after two Persian monks returning from China had smuggled silkworm eggs in their canes and brought them to the Emperor Justinian, at Constantinople. The climate of South Greece was propitious to the rearing of these silkworms, and so was that of Sicily and Spain. Byzantine Greeks, brought by Normans into Sicily, wove silken fabrics at Palermo. It is a question whether the Arabs introduced the weaving of silk into Spain at a prior or subsequent time. Later on Lucca, Genoa, Venice, and Florence were notable for silk weaving, as were the northern parts of Italy for silkworm rearing, and still later Lyons and Spitalfields were celebrated for their silk fabrics. Specimens of silks and velvets claiming to be from these places are shown at South Kensington.

In the Sicilian weavings we find a wonderful variety of effects. The way in which the shuttle should pass between alternating sets of single, double and treble warp threads was apparently more fully considered then than now. The old weavings have been imitated, but not surpassed in these days, however much style of ornament or design may have changed. Weaving is so different a process from embroidery that it is doubtful if specimens of those arts should be intermixed. As a rule, those pieces of artistic needlework which are now placed with the woven fabrics are of lesser importance than the great copes, chasubles, dalmatics, curtains, and coverlets elsewhere in the museum. Oriental fabrics are scarcely to be found in the corridor of the textile collections, and yet their presence is requisite to complete the telling of the story. Some few fine tapestries are hung upon the walls of the adjoining staircase, and in the corridor. * * * Limits of space prevent us at the present time from further discussing the textile collections at South Kensington, the complete arrangement of which in divisions of woven fabrics, embroideries, carpets, tapestries, and laces appears to be highly desirable and may be advantageously pressed forward.

Anomalies in the Spanish Tariffs.

There are few merchants in this country who have had any transactions with Spain, says the *Manchester Guardian*, who cannot testify to the inconvenience and injury done to trade by the different decisions of the Spanish Custom-house officials in interpreting and applying the tariff. These difficulties not unfrequently arise in the same Custom-house from the appointment of new and over-zealous *employés* with an insufficient knowledge of goods. Such officials, stimulated by the prospect of participation in the fines imposed, pay little attention to precedents in applying the different sections of the tariff. To take one example, which recently occurred at the Custom-house of Port Bou. A Barcelona firm has been in the habit of importing a heavy, close-made woollen cloth known as printer's blanket, paying duty upon it as felt. The last consignment, however, was objected to by the officials, who had made the discovery that the article was really a textile, and the high duty on woollen cloths, amounting to more than seven times the original duty, was imposed. Although felts appear in the tariff under the classification of textiles they are not considered as such by the Custom-officers, and they are admitted at a specially low duty. In the case in question the officials had formerly considered the article as a felt, as it really appears to the uninitiated, and then, making the discovery that it was a textile, quite overlooked the fact that the article is also specially named in the index to the tariff as being subject to the duty on felts; in fact, it is the only article in the long descriptive list of textiles which can be admitted as felt. A protest has been drawn up, but it will probably be months before the appeal is decided, and in the meantime the exorbitant duties have been exacted. Complaints have long been general of the length of time taken by the Spanish authorities in settling these disputes, and what is felt to be particularly unjust is that although the merchant has to pay the fines, double duty, &c., when the decision goes against him no compensation whatever is made for all his expenses and losses if, after six or nine months perhaps, a decision is given in his favour. It is noteworthy that while the practical knowledge of some of the Spanish Custom-house officials is as described above, these officials are considered to be capable of deciding better than a certificate of origin whether an article be of French or English manufacture.

A note from Paris says: Silken materials have now returned to cameo tints; shot silks and surahs became very fashionable after the introduction of the lovely nacré tints, and they combine specially well with broché containing the same colours. Chiné patterns are also in great favour for rich dresses for ladies of all ages, on black, or some tender pale-coloured grounds such as sea-green, salmon-pink, oriental blue, hydrangea, &c. The pattern, consist principally of flowers, in separate flowers, and in their correct colours, the outline, however, being shaded off and indistinct, the distinguishing trait of chiné patterns. Striped silks are also much used, especially moiré and satin, for trains and skirts either plain, or if the stripe be very large, pleated, so that the insides of the pleats are of a different and generally darker colour.



ORIGINAL DESIGNS.

On our first plate will be found a design for a Linen Damask Table Cover. This sketch shows marked originality, and reflects credit upon the designer, Mr. J. L. Horner, 57, Dodworth Road, Barnsley.

We have had it pointed out to us that it would be desirable, occasionally, to give designs of a simple nature with a view to making our Journal of value to a numerous section of manufacturers, who are unable to utilise designs of an intricate or elaborate character. In accordance with this desire, we present, as our second plate, a simple design and border suitable for Dress Goods. It may be produced in Worsted, Cotton, Silk, or Velvet Goods. The sketch has been designed by Mr. R. Lord.

A sketch for Damask is the subject of our third design. It is from the pencil of Mr. W. E. Foster, 344, Priory Terrace, Lower Broughton Road, Higher Broughton, Manchester. This design may be adapted to a variety of fabrics.

** We beg to inform manufacturers and others that adaptations of designs, published in the "Journal of Fabrics and Textile Industries," can be made at the Office by experienced Designers, and that Original Designs can also be furnished at moderate charges.

We beg to inform Manufacturers and Designers of all classes of Textile Fabrics that we can now furnish the Designs, which have been issued in the back numbers of this Journal, bound in a neat cover. We have had 500 sets of these reprinted, for a part of which orders have been already taken. The Designs are specially adapted for Carpets, Tapestries, Table Covers, Damasks, Cretonnes, Muslins, Laces, Embossed Velvets, Linens, Quilts, Toilet Covers, Calico Prints, Silks, Stuffs, Felts, Curtains, Figured Braids, and a variety of other Fabrics. We shall be pleased to forward copies (carriage paid) on receipt of 10s. 6d. each, to any part of the United Kingdom, and for 11s. to any country abroad.

MONTHLY TRADE REPORTS.

Wool.—In Colonial wools, during the past month, a fair business has been passing for the better classes, both in London and in the local markets, and prices have kept firm. In the Scotch districts the trade done has been of a meagre character. In the Yorkshire markets English wools sold fairly well during the opening days of the month, but during the latter part a feeling of quietness prevailed. Prices, as a rule, show very little alteration. In the yarn and piece branches, in the Bradford and Halifax districts, business has been of a restricted character. A few orders are being worked for seasonable goods, but the trade on the whole, is insignificant. The export trade, with some slight exceptions, has been of a dragging nature, and the home trade has been very quiet.

Cotton.—The demand for the raw material has varied considerably during the month, with a consequent variation in prices. In the yarn and cloth markets an improved state of things has been experienced, with the exception of two or three

districts in Lancashire. Unfortunately prices have not improved to any great extent, and manufacturers find it, as a rule, a difficult matter to make their various goods at remunerative rates. Yarns for export have improved slightly in prices, but for home account the rates obtainable have been less firm. In the better classes of shirtings more business has been passing, but in the lower qualities only a moderate trade has been done. In the heavier classes of goods, both for home and export, the demand has been slow, with a tendency to lower rates. In business of a speculative character, little has been done, either in yarns or cloth.

Woollen.—In the heavy woollen districts trade has been of a dragging nature, but prices have kept moderately firm. In the South Scotch districts most of the mills have been fairly employed; the stocks held over are not heavy, and the prospects of this branch are good. In Leeds business has been active in most branches, the greatest demand having been for the finer and lighter kinds of worsted, coloured tweeds, serges, &c.; prices having in many instances advanced. In Huddersfield trade has been almost at a standstill, the strike which has continued has done so great an injury to the district, that it cannot easily be remedied. The export business with France, the United States and Canada, has been fair, but the returns for other countries have been below the average. In the home markets the demand has been restricted. The outlook at present is anything but cheering for manufacturers and others interested in the business of this district.

Linen.—A fair amount of activity has characterised the trade in some departments, whilst in others a meagre business has passed. In the jute branch a brisk state still continues, both in yarns and cloth, and prices keep very firm. The markets for flax goods have been of a favourable character, and prices have been firmer. Stocks of most classes of goods are light.

Lace.—No great improvement has been experienced in the trade during the month, but an improved feeling pervades the market, and manufacturers are sanguine of an early return to the state of things which prevailed a few months ago. The curtain branch has been rather inactive, and prices are still low. In mosquito nets more has been doing, but in other descriptions of plain goods the demand has been weak. The silk branch has been very quiet. The demand for Spanish laces has been above the average. The export demand for various goods has improved in tone, and prices keep moderately firm for all classes of goods.

Carpets.—Business has improved during the month, and manufacturers, on the whole, are working full time. Trade with the United States has improved, and a much better and a more hopeful feeling exists amongst all engaged in the trade since the alteration in the tariff. Although it has not been lowered to any great extent, yet it has made the prospects of the carpet industry appear a little brighter, and, during the ensuing autumn, manufacturers are sanguine of an improved demand for carpets taking place. The home trade is moderately good, and prices are a little more remunerative.

Probable Change in Styles in Trouserings.

A French contemporary says a marked change in trouserings is threatened, and that it may be soon expected. The small and complicated designs may give place to larger figures. They will be presented somewhat after the form of the Scotch plaids, and are even now found in some assortments of very bold styles by both French and English manufacturers. L. Bertin, the director of *Les Tissus*, in speaking of this innovation, remarks:—"We must say that this daring attempt receives a satisfactory welcome, and it may happen that these styles will be largely encouraged by wearers." They are not yet freely adopted; there is, he thinks a lively tendency toward their adoption. In former times large squares were placed on stuffs of plain ground; at the present they are applied to varied or complex grounds. Combining odd shades by the warping and weaving in that which forms the ground, longitudinal and transverse stripes are obtained, that give plaid effects.



LINEN TABLE COVER.



DRESS GOODS.

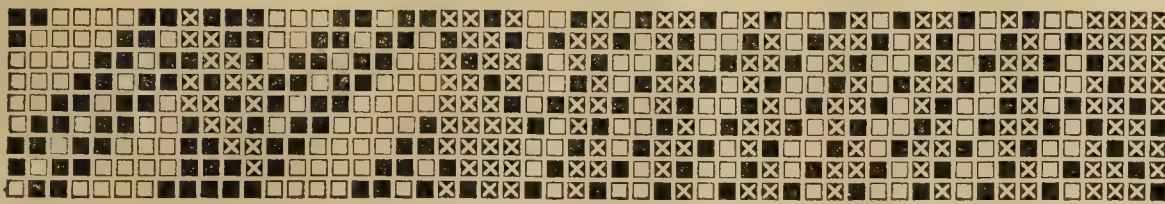


DAMASK.

ORIGINAL DESIGNS.

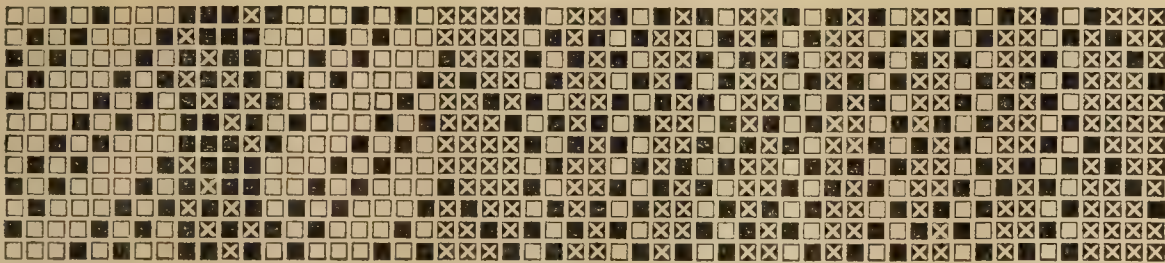
Shirtings, Gingham, &c.

No. 63.



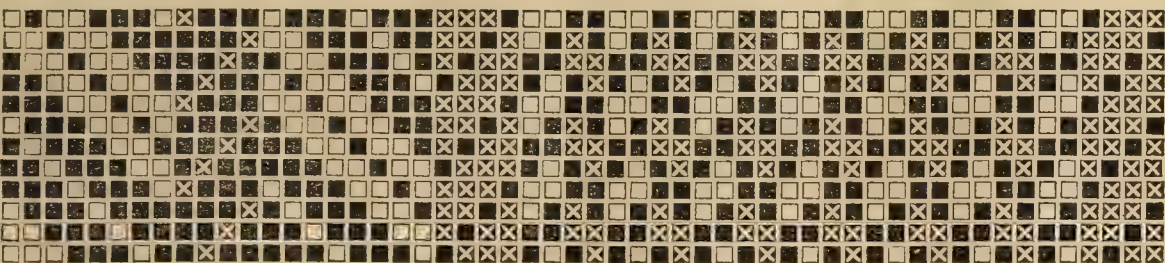
Design.

No. 64.



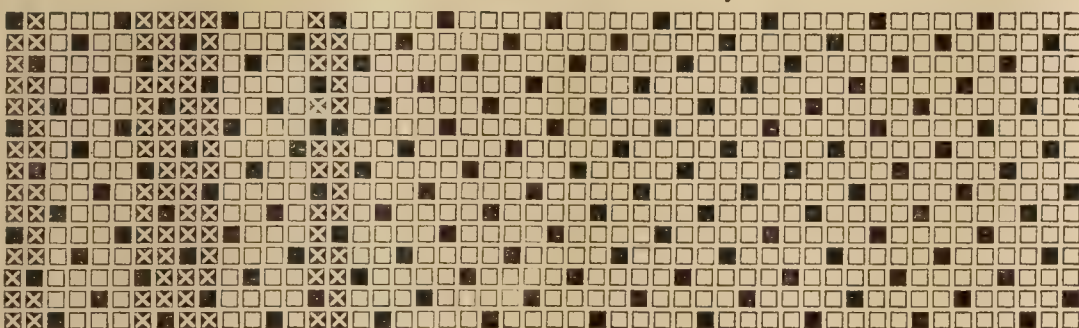
Design.

No. 65.



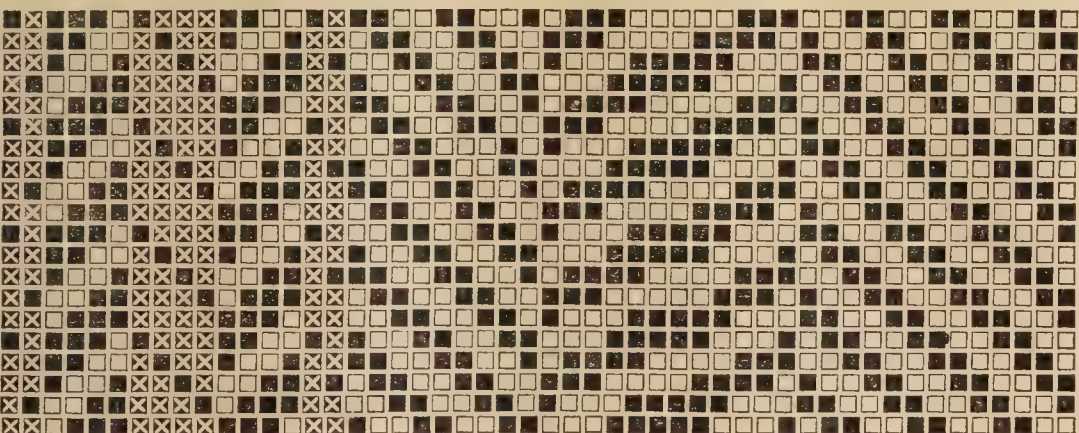
Design.

No. 66.



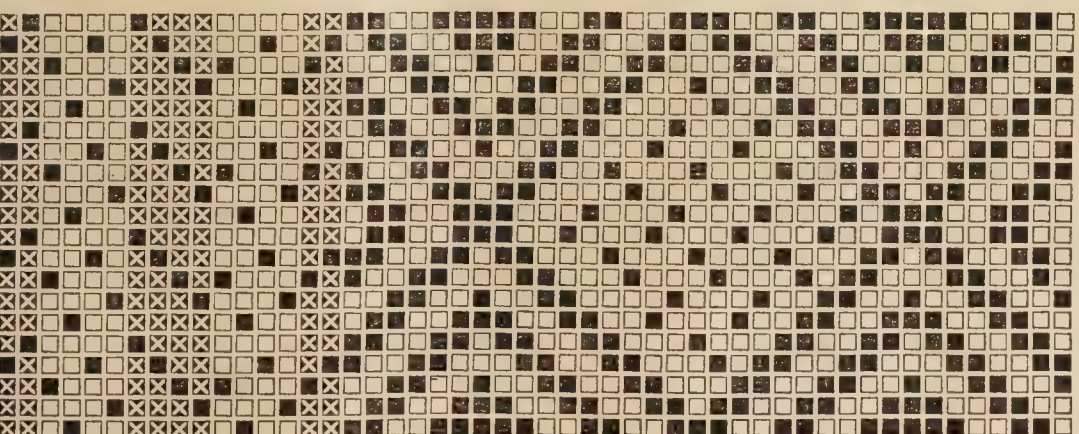
Design.

No. 67.



Design.

No. 68.



Design.

Patterns Nos. 63, 64 and 65 are 54-end patterns, the warp being as follows:—

8 ends White 4 Red.

8 „ „ 4 Blue.

2 „ „ 2 „

2 „ „ 2 „

2 „ „ 2 „

2 „ „ 2 „

2 „ „ 2 „

2 „ „ 2 „

2 „ „ 4 „

Patterns Nos. 66, 67, 68, are 50-end patterns, the warp being as follows:—

2 ends Red, 4 Blue and White Mottled.

4 „ „ 4 „ „ „

2 „ „ 34 „ „ „

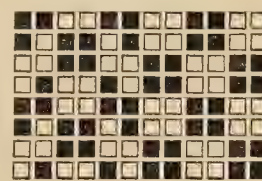
No. 66 is a common 5 Thread pattern, 4 up and 1 down.

The ■ represents the weft.

In cutting the cards, cut all White and ■

Suitings for Spring and Summer 1884.

No. 69.



Design.

Black and Crimson.

Drab and Tan.

Drab and Tan.



Draft.

Warp: 1 thread Black and Crimson twist.

2 thread Dark Blue twist.

1 „ Sage twist.

1 „ Drab and Tan twist.

2 „ Dark Blue twist.

1 „ Sage twist.

1 „ Drab and Tan twist.

2 „ Dark Blue twist.

1 „ Sage twist.



Pegging Plan.

12 ends.

Warp Yarns: 5,888 yds. 5,888 yds. or 2,944 yds. per lb. when twisted.

1 Black 1 Crimson twisted, 14 turns per inch.

1 Drab 1 Tan „ „ „

1 Sage 1 Sage „ „ „

1 Dark Blue 1 Dark Blue twisted, 14 turns per inch.

Weft Yarns: 1 Olive 1 Olive twisted, 14 turns per inch.

1 Black 1 Black „ „ „

Weave: 3 Picks Olive, and 1 Pick Black and Crimson twist.

Also 3 Picks Black, and 1 Pick Drab and Tan twist.

The one Pick must be thrown in the shed marked ■ in Pegging plan.

Reed 14: 2 Threads in a dent.

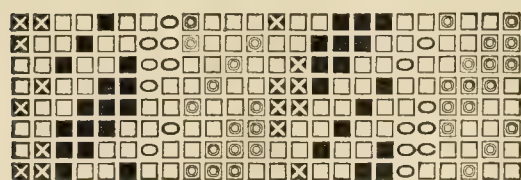
28 Picks per inch.

68 inches wide in loom.

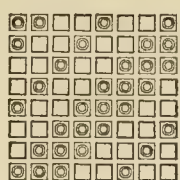
56 inches wide when finished.

Clear finish.

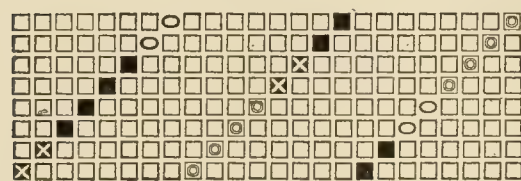
No 70.



Design.



Pegging Plan.



Draft.

- ◻ Olive.
- Blue and Gold.
- Black.
- ✕ Green and Crimson.

Warp : 4 threads Olive.
 2 „ Blue and Gold twist.
 4 „ Black.
 2 „ Green and Crimson twist.
 4 „ Olive.
 2 „ Blue and Gold twist.
 4 „ Black.
 2 „ Green and Crimson twist.

—
 24 ends.

Warp Yarns : 11,946 yds. 11,946 yds. or 5,888 yds. per lb. when twisted.

Blue and Gold twisted, 6 turns per inch.

Green and Crimson „ „ „

Olive single yarn, 5,888 yds. per lb.

Black „ „ „

Weft Yarns : Brown single yarn, 5,888 yds. per lb.

Slate „ „ „

Weave : 3 picks Olive and 3 picks Black.

Also 3 „ Brown and 3 „ Black.

„ 3 „ Slate and 3 „ Brown.

„ All Slate.

„ All Brown.

„ 4 picks Slate, 2 picks Green and Crimson twist.

„ 4 „ „ 2 „ Blue and Gold twist.

Reed 18 : 3 threads in a dent.

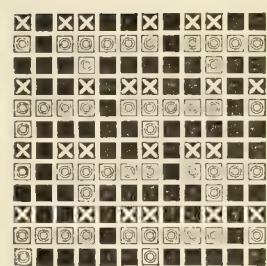
52 picks per inch.

68 inches wide in loom.

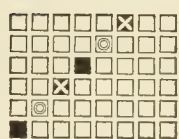
56 inches wide when finished.

Clear finish.

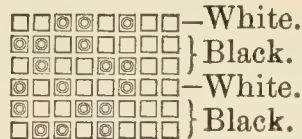
No 71.



Design.



Draft.



Pegging Plan.

—White.
 —Black.
 —White.
 —Black.

Begin the Draft with 1 thread Black and White twist and follow on as per Warp Ticket.

Warp :—1 thread Black and White twist.

1 „ White self twist.

1 „ Dark Slate self twist.

1 „ Black and White twist.

1 „ White self twist.

1 „ Dark Slate self twist.

—
 6 ends.

Warp Yarns : 11946 yds. 11946 yds. or 5888 yds. per lb. when twisted.

1 Black and 1 White, twisted 14 turns per inch.

and 1 White and 1 White, „ „

1 Dark Slate and 1 Dark Slate „ „

1 Black and 1 Black „ „

Weft Yarns : 1 Black and 1 Scarlet „ „

1 Black and 1 Light Green „ „

Weave 2 picks Black and 1 pick White, to be thrown shed as marked on Pegging Plan.

also 2 picks Black and 1 pick Black and Scarlet.

also 2 picks Black and 1 pick Black and Green.

also 2 picks Black and White and 1 pick White.

Reed 18 :—3 threads in a dent.

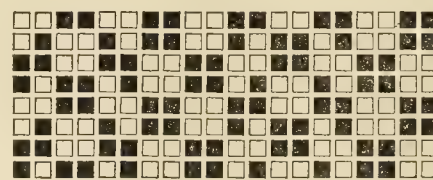
52 picks per inch.

68 inches wide in loom.

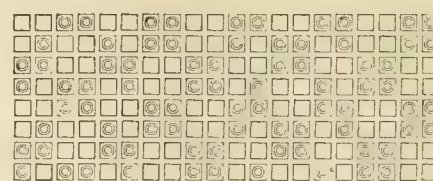
56 inches wide when finished.

Clear finish.

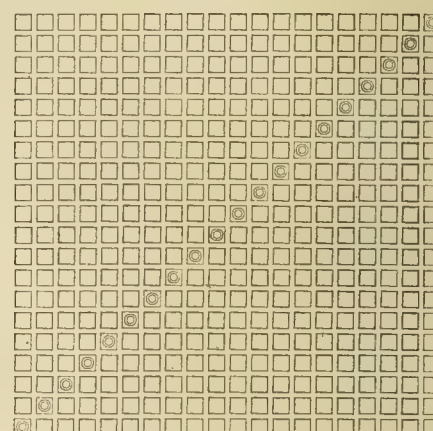
No. 72.



Design.



Draft.



Pegging Plan.

Warp : All Black and White twist,

Warp Yarn : 1 Black 5888 yds. per lb. } Twisted 14 turns per inch
 1 White 5888 „ } 2944 yds. per lb. when
 twisted.

Weft : 2 threads Black 5888 yds. twisted 14 turns per inch 2944 yds.

2 „ White „ „ „ „ „

2 „ Bronze „ „ „ „ „

2 „ Olive „ „ „ „ „

All to be woven with one shuttle.

Reed 14 : 2 threads in a dent.

28 picks per inch.

68 inches wide in loom.

56 inches wide when finished.

Clear finish.

Dyeing Silk and Wool Mixed Goods.

Fabrics composed of silk and wool are woven from previously dyed yarns. Mr. Roussel, a French dyer, proposes to weave them of yarns bleached or unbleached, and dye them in the piece. He has made a study of the relative degree of adhesion of the artificial colouring matters for the two animal fibres, and of the shades which are struck. Ordinary fuchsine, for example, gives to silk a rose tint, and leaves wool almost unaffected. Acid fuchsine, on the contrary, dyes wool rose, and has little or no effect on silk. If, after having used acid fuchsine for the wool, we add methylene blue, we obtain two colours—rose on the wool, and sky-blue on the silk; the methylene blue having a stronger adhesion for one fibre than for the other. Examples of the different degrees of adhesion are numerous, but the above indicate the principle now proposed to be utilized. In certain cases shades can be modified by the intervention of natural dyes. Economy is claimed for the proposed process.

A New Green Colour.

According to Ad Carnot, a non-poisonous and permanent new green colour may be prepared as follows :—A solution of bichromate of potash is mixed with a sufficient amount of phosphate of soda; sodium acetate and sodium thiosulphate are added, and the slightly acidified mixture is boiled for an hour. A fine green precipitate is thrown down, which is not volatile, and is perfectly fast against air, light, dilute acids, soap, &c. It may be used for painting, calico printing, &c. For dyeing, the material to be dyed is treated with a mixture of bichromate, phosphate, and acetate of soda, and is then boiled in a slightly acidulated bath of thiosulphate of soda.

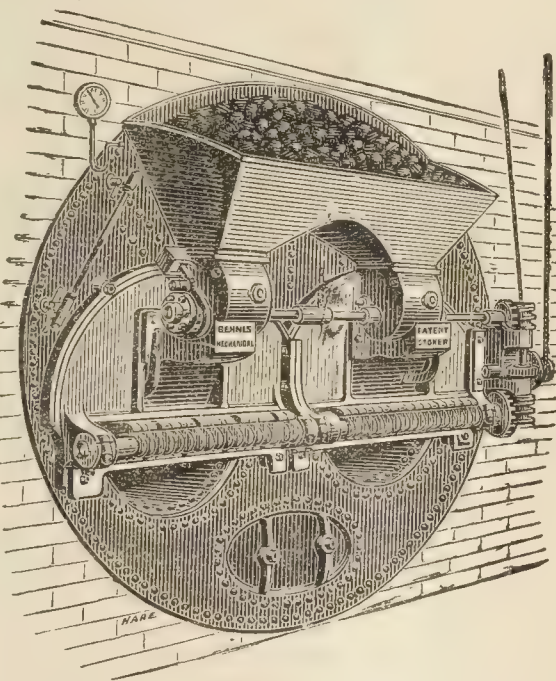


MACHINERY, TOOLS, &c.

The Smoke Nuisance and Waste of Fuel.

BENNIS'S MECHANICAL STOKER.

We have from time to time given descriptions of different mechanical appliances now in use for the prevention of the smoke nuisance and the waste of fuel, a question which for some years has been a leading one in a sanitary and economical point of view. At the recent Smoke Prevention Exhibitions at South Kensington and in Manchester, some very useful and economical appliances were shown, the various merits of which could hardly be tested at an exhibition. Some of these have been shown, in actual operation, to be of undoubted merit, and others have failed in fulfilling the conditions under which they were guaranteed. During the former exhibition we gave a detailed description of the leading exhibits, which, including the mechanical stokers and fuel economisers belong to the following firms:—Messrs. Chubb and Co., Mr. John Collinge, Mr. J. Proctor, Messrs. Martin and Co., Messrs. J. Newton and Son, and Messrs. T. and T. Vicars. The Manchester Exhibition following so closely upon the one at South Kensington, we only gave a general notice of it without detailed descriptions. Recently our attention has been drawn to Bennis's Mechanical Stoker and Self Cleaning Furnace, which was exhibited at Manchester, and a model is being made by Messrs. Sutcliffe Brothers, of Stanley Works, Godley, near Manchester, and as this appliance is one of the most recent patents, we furnish our readers with an illustration, and a short description of its capabilities. The machine can be fixed to a boiler in a few hours, and having few working parts, the need of repairs is reduced to a minimum, one shaft doing the whole of the work in running the mechanism. The appliance will consume either large coal or



slack, the former being crushed to nuts, previous to being delivered to the furnace. The fuel is scattered by four distinct throws with a shovel (which contains about six ounces) evenly over the first four feet of the furnace, thus resembling the mode of firing by hand. This is done whilst the doors are closed. The operation of crushing the coal is effected by the single shaft, which works the whole machine. The furnace is so arranged that the bars all move back towards the bridge (on the flat $1\frac{1}{2}$ inches), taking the body of fire with them, and return alternately, breaking up any clinkers which may be forming, and delivering the same into a back chamber, where any remaining heat is given to

the boilers. No air is admitted but through the bars, which are always free from clinkers. Where it is occasionally necessary to resort to hand-firing, the stoker can be stopped instantly, and the bars continue working as before. Messrs. Sutcliffe Brothers claim the following advantages for the machine:—Economy of fuel, an increased production and regular supply of steam, no cleaning out while at work, and an absence of smoke. They express an opinion, which we fully endorse, that no correct judgment can be come to on mechanical stoking, without seeing and testing thoroughly the various machines in actual work. This would prove how many pounds of water each would evaporate per hour under the same conditions, and the weight of coal consumed in the time, &c. Numerous trials of the stoker have been made, and have been successful. We may add that we have, during the past few days, had opportunities of seeing the machines in actual operation, and of making inquiries as to their efficiency, and we find they are giving unqualified satisfaction to the users, who have effected a considerable economy through their adoption, and that the stoker received the highest award at the Manchester Smoke Abatement Exhibition.

The Alizarine Manufacture.

The German alizarine manufacturers have renewed their agreement for the regulation of prices for two years longer. The *Frankfurter Zeitung* condemns the policy of the manufacturers in this matter, on the ground that such artificial arrangements cannot permanently maintain prices at an abnormally high level because excessive charges diminish consumption. At the present time, however, such an agreement is the more unwise, as the approaching expiration of the English patent will subject the

German producers to a keen foreign competition, which can scarcely fail to depress prices and break up the combination. Moreover, it is remarked in a German journal which is closely connected with the management of the Höchst Dyeworks, that "towards the end of the year such changes will take place that the agreement, so far as its actual operation is concerned, must practically cease to exist." The Frankfort paper remarks that such a statement, emanating from such a source, causes further information to appear extremely desirable, not merely with reference to the Brönnerschen Dyeworks, but also in the interest of the shareholders of the Badischen Aniline Manufactory, and the Höchst Dyeworks, which establishments appear as leading members of the associated group and derived great advantages from the convention last year. Writing later, the *Frankfurter Zeitung* states that two prominent members of the group have just returned from England and brought with them the consent of those directly interested in this country to the arrangement. The terms of the agreement, however, embody an alteration in the clause relating to the notices to be given for the termination of the convention, according to which it cannot be stated that the convention has been positively extended for two years, as originally announced. Moreover, the new agreement has yet to be ratified by the German producers. On the other hand, it is insinuated that the allegations as to the ease with which the agreement can be cancelled are made in order to discourage intended competition. Whether the convention is likely to be durable or not, adds the Frankfort paper, the Badische Aniline Manufactory will still have an advantage over all competitors, as it holds the patent monopoly in America, and this will continue in force for several years yet. If it be true that an agreement has been made between the German and English producers, the expectations of a considerable decline of prices seem not likely to be immediately realised.

To Our Readers.

Our attention has been directed to the advisability of setting apart in the "Journal of Fabrics and Textile Industries" a space for the asking and answering questions, as well as of interchanging ideas on various knotty points connected with the numerous branches of textile trades, from the raw material to the completion of the fabric. Hitherto, queries have been answered by letter, as we have considered a month too long a time to elapse between question and answer; but should the suggestions offered in the appended letter meet with the favour of our subscribers, we shall have pleasure in affording space for their accommodation.

To the Editors of the "Journal of Fabrics and Textile Industries."

Gentlemen,

I now write, not with any intention of advising you or interfering with your present existing arrangements, as the thoroughly satisfactory and useful information which your valuable paper contains from month to month is sufficient proof that this would be quite unnecessary, but allow me merely to make a suggestion which, if acted upon, would, I think, be highly conducive both to the interests and tastes of a further class of supporters, and would, I am sure, in a great measure, further help to promote the welfare and patronage of your paper.

In the first place I hope I may not be accused, by those engaged in other industries, of selfishness, as I intend speaking for the interests, more especially, of those engaged in the process of Cotton Spinning, knowing, as we all do, that this is the most important and complicated of all the Textile Industries, and one on which the greatest differences of opinion exist, owing to the different classes of machinery which may be used, and the various defects in the raw material, all of which require a different mode of manipulation. My suggestion, therefore, is this, that, say, as much space, as possibly can be allowed, should be opened to contributors for the purpose of discussing and explaining different points, important to those engaged in the Trade, as I can confidently state that it will be difficult to find many managers of Cotton Factories at the present time who hold the same opinion with regard to the manner in which Cotton should be treated, from the bale to the cloth; however, if the space necessary for this could not be allowed, I think that the Journal might be enlarged and the price increased in proportion.

Perhaps you might kindly find room in your next issue to insert this note as I am sure that it will receive cordial and substantial support from a number of your present readers, and as I have already stated, increase them still further. I would also suggest that those who are in favour of this would kindly advise you of it. Begging your favourable attention,

I am, Gentlemen,

Respectfully yours,

H. M.

We learn from Mr. Royle, the hon. sec., that it is intended to hold another British Calico Printers' Garden Party at the Royal Botanical Gardens, Manchester, (under distinguished patronage) on June 23rd—the proceeds to be given to charitable institutions.

Why Aniline Black turns Green.

According to C. Koechlin, in the *Farberei-Muster Zeitung*, the low temperature at which they are formed is the cause why some aniline blacks turn green. Black prepared at temperatures above 70° C. (158° Fah.) will never turn green, no matter what metallic salt is employed in its preparation, provided there is enough of it, and that the action lasts long enough. The effect of heat is best seen in Lauth's process of dyeing with oxide of manganese in aniline solution. If worked cold it produces a black that turns green, and so it does if the temperature is not over 50° C. (122° Fah.). Between 50° and 60° C. the black still shows some change, while in that formed between 75° and 100° C. (167° to 212° Fah.) no change at all can be noticed. In dyeing by Lauth's system the aniline solutions blacken rapidly and the colours smut off, which may be due to the formation of manganese brown. This evil can be removed by adding to the aniline one-twentieth of its weight of naphthylamine, and working with very dilute solutions, for example, 2 or 4 grammes of the sulphate of the alkaloid and 20 grammes of "*Leiocome*" or roasted starch to the litre (0.2 or 0.4 per cent.). This process is the quickest and cheapest, and has least effect on vegetable fibres. When chromate of potash is used the cloth is first saturated with aniline, then put through a boiling bath saturated with the chromate (40 per cent).

A New Machine for Removing Sand, Dust, &c., from Cotton.

Mr. Joel, British Consul at Savannah, has made a report to Earl Granville respecting the measures adopted for preventing the shipments to England of sanded and false-packed cotton. In his report Mr. Joel says that the agitation by the cotton spinners in England last season on the subject of sanded and false-packed cotton has resulted in inventions which, if adopted on a large scale, will do much towards improving the quality of cotton shipped from America to Europe, as well as removing the cause of so much complaint. A machine for this purpose had been invented by a firm of cotton merchants in Savannah. It is a very effective machine, and consists of a cone-shaped wire sieve, 8 ft. long and 2 ft. wide at one end, and 4 ft. at the other, revolving on 14 rollers. Inside of this cone, and revolving in an opposite direction to it, is a shaft with wooden arms or beaters. The cotton is fed into the small end of the cone, and in passing through it is thoroughly manipulated, so that when it reaches the large end or mouth of the screen it is divested of sand or other foreign substances, which are carried off by the blow fans that exhaust the air from a box at the bottom of the cone, and the staple comes out clean and free from sand, dust, or other foreign matter. The cotton is afterwards taken to the presses, where it is packed into bales, and it is then ready for shipment. A machine had also been invented to clean seed-cotton, it being shown that cotton passing through the cleaner was worth two cents per pound more.

Book Notice.

COTTON SPINNING: by H. E. WARMSLEY. *Abel Heywood and Son, Manchester.*

A new work on "Cotton Spinning" has just been published. It is intended principally for the student or operative who has a desire to gather a general knowledge of the theory and practice of spinning cotton, in order to fit him for the responsible position of master or manager of a cotton factory. It is not a treatise in any manner voluminous; but in a condensed form gives some valuable and very practical hints on mixing cotton, the uses of the various machines, sundry calculations of use in cotton factories, and also models of account books specially adapted for the business. The work is illustrated with plates, which makes the text clear to the reader. The author gives some sound advice to intending managers, stating, as his opinion, that the only way in which to become successful is to work practically through each department in a mill, commencing at the lowest post and rising to the highest; to perfect themselves in the mechanics' shop, and to study mechanical principles in general, and the steam engine in particular. The work ought to be in the hand of every intending mill manager, and also in the hands of those who wish further to improve the positions they now hold.

ODDS AND ENDS.

At a recent sitting of the Industrial Society of Mulhouse, Mr. Camille Koechlin showed a pattern printed with coal very finely powdered and fixed by means of albumen, the shade obtained being the same as that produced by lampblack. It resists soap and all chemical re-agents.

A factory is to be fitted up in Paterson, N.J., for the manufacture of ramie or Chinese grass. A large mill is being negotiated for, and a great number of hands will be needed. Some of the first New York capitalists and a large banking institution are associated in the enterprise, and it is to be started with ample capital.

The Postmaster-General has complied with the request of the proprietors of provincial newspapers to place the conveyance of newspapers outside parcels-post regulations. Mail-cart contractors will therefore be permitted to carry newspaper parcels of any weight, so long as it does not interfere with the delivery of the parcel and letter mails.

Mr. Eug. Maubec proposes a new application of the chloride of calcium for removing the lime soap from wool and woollen fabrics. For this purpose a solution of chloride of calcium with acid reaction is prepared by dissolving lime in dilute muriatic acid, or by adding muriatic acid to saturated lime water in the proportion of one to three pounds of acid to ten gallons of water.

In accordance with the promise made by Messrs. M. Oldroyd and Sons (Limited), Dewsbury, six months ago, to give back to the weavers employed by them the same prices for pieces as were paid before the strike, the firm posted up in the shed on May 1st a statement similar to the original one, and destroyed the reduced statement. Great satisfaction was given throughout by the fulfilment of the promise.

Mr. Leon Maillard proposes the employment of ozonised oxygen for bleaching all textile fibres. The oxygen is ozonised by the electrical current of an induction coil, and is then stored in a gasometer. The materials to be bleached, previously cleaned by means of soap or carbonate of soda, are exposed in a close vessel to the action of this ozonised oxygen, which has been previously dried by passing through a glass tube filled with fused chloride of calcium or pumice-stone saturated with strong sulphuric acid. It remains to be seen if this process is of any practical value.

The American Exhibition of Foreign Products, Arts, and Manufacturers, announced to take place at Boston next September, is understood to be already an assured success. The artists and manufacturers of Great Britain have taken considerable interest in this exhibition, which is to be held in the fine Permanent Exhibition Building of the Massachusetts Charitable Mechanics' Association. Mr. Carroll D. Wright, the Chief Commissioner to Great Britain, has taken an office at 49, Lime Street, E.C., where he will receive applications for space, and furnish all necessary information.

The following Companies at Oldham have just declared their dividends. The Windsor Spinning Co. has made a profit of 2s. per share, or 16 per cent. Greenacres Spinning Co. has made the large profit of £2,105, out of which the directors propose to pay a dividend of 12½ per cent., and carry forward £824. The Coldhurst Spinning Co. announces a profit which will enable the payment of a dividend of 1s. per share, or 6 per cent., besides wiping off the adverse balance of £500. Asa Lees and Co., Limited, have just declared an interim dividend at the rate of 15 per cent. per annum for the half-year just ended.

Mr. Samuelson, M.P., has given evidence before the Channel Tunnel Committee strongly supporting its construction from a commercial point of view. Himself largely engaged in machine making, Mr. Samuelson made special reference to the advantages which he thought would follow to the machine trade of Manchester and Oldham. He said he had found in Belgium that machinery was ordered from Alsace rather than from England because of the cost involved in the careful packing requisite for its safe carriage by sea, which would be avoided if the machinery could be put into a truck in Lancashire and delivered from the same conveyance at the place where it was to be employed in manufacture.

An agreement between Belgium and Spain extending the facilities of the pattern post will come into operation on the 1st of May next. By this arrangement pattern parcels between Belgium and Spain, including the Balearic and Canary Islands and the Spanish possessions on the West Coast of Africa, may pass up to a limit of 12 oz. in weight and 12 in. by 8 in. by 4 in. in size. France has already enjoyed this increased facility for the exchange of samples since the 1st September last. A similar arrangement with this country would be of much service to merchants engaged in the Spanish trade, the present limits being 8 oz. in weight, and 8 in. by 4 in. by 2 in. in size.

NOTICE TO ADVERTISERS.

Advertisements will be inserted at the following rates; (in all cases prepaid): *Twenty words, One Shilling; Sixpence* for each additional *Twelve* words or part of *Twelve*. The address being counted as part of the Advertisement.

Displayed Advertisements according to arrangement.

Wanted.

TOILET COVERS, Alhambras, Quilts, Honey Combs, &c. Designer of several years experience in above trade requires a situation. Moderate Salary.—Address J. W. C., "Journal of Fabrics" Office, Halifax.

Mills to Let or Sell.

TO BE LET, a **MILL**, substantially built, about ten minutes' walk from the Exchange; four storeys high, 26 yards by 14, with or without power. Apply to Ralph B. Robinson, Valuer, &c., Arcade Chambers, St. Mary's Gate, Manchester.

Cragg Mills, Windhill, Shipley, Re Benj. Crabtree.

TO BE LET, the above **MILLS** with 199 Looms 40in. and 52in. Reed Space; ample Power and Warehousing; good hands. Rent very low; prompt possession.—Apply to Mr. J. Buckley Sharp, Bradford, or to Mr. T. A. Taylor, 6, High Street, Huddersfield.

TO BE SOLD or LET, a small compact **MILL**, **WEAVING SHED**, and **COTTAGE**, situate in Gas Street and Suffield Street, Middleton, near Manchester; the premises are central, the chief is low; about half of the leased land is not built upon; the present tenant's lease expires on the first of June. Apply to James Fletcher, Old Hall Street, Middleton.

TO LET, **HEWNDEN MILLS**, suitable for Woollen Manufacturing in all its branches. Comprises Mill, Weaving Shed, and Warehouse; on the Halifax and Keighley Railway. Hands plentiful. Apply to D. and R. England, Britannia Mills, Bingley.

TO LET or SELL, that excellent stone-built **MILL**, called **Calder Bridge Mill**, near the Railway Station at Brighouse, with Steam Engine of 40-horse power, nominal, and two boilers on the best principle.

Both Engine and Boilers have been put in within a few years past, and are in first-class condition, and the premises are in good repair in every respect. The Mill is especially suitable for spinning and manufacturing.

For further information and to view, apply to the owners, Messrs. R. Kershaw and Co., Silk Spinners, Woodvale Mills, Brighouse.

MILLS.—TO BE LET or SOLD, with immediate possession, the **GODLEY MILLS**, near Hyde, adjoining Newton Station, suitable for Cotton Spinning, Hatting, Bleaching, Dyeing, or other manufacture; 16,000 square yards of land and ample water supply; price low, or rent very moderate; steam engines and boiler in good order.—Apply Henry Howard, Park Corn Mills, Stockport.

Machinery.

TO Silk, Poplin, and Cloth Finishers.—A Cylindrical DRESSING MACHINE, up to 28in., with 5ft. flywheel; Supler and Rolling Machine, Watering Machine, up to 32in. with flywheel; Upright Supler, also Heating Furnace, to be **SOLD**, a bargain.—Apply to G. F. D., Haddington Road, Dublin.

ONE of Holt's Self-acting WILLOWS; Two Double-lap Machines, 40in., with piano motion, by Lord; One Single 40in.-lap Machine, by Platt; One Double 48in.-lap Machine, with piano motion and patent feed, by Lord.—Joseph Lawton, Church Stile, Rochdale.

THE GAZETTE.

Adjudication of Bankruptcy.

Dyson E., Huddersfield, yarn spinner.

Whittell Joseph, Stainland, Halifax, woollen manufacturer.

Balmforth G., Slaithwaite, Huddersfield, woollen cloth merchants.

Carr William T., cotton manufacturer, Cottage Mill, Blackburn.

Liquidations by Arrangement or Composition.

Fielden Eli, Crossley Fielden, and William Fielden, cotton manufacturers at Carr Mill, Todmorden, Halifax, as E., C., and W. Fielden.

Horsfall L., Todmorden, cotton manufacturer.

Pearson N. H., 6, Park Place, Leeds, Yorks., cloth manufacturer.

Hughes J., 52, Bread Street, Cheapside, London, mantle manufacturer.

Cantley H. D., Bread Street, London, Manchester linen and trimming manufacturer.

Cormack G. B., 21, Ludgate Hill, London, fancy warehouseman.

Cockcroft J., and Clay, J., Hebden Bridge, Yorks, cotton manufacturers.

Tatlow W., Willow Bath Mill, Wirksworth, Derby, smallware manufacturer.

Bradley I., Bruntcliffe Mills, Morley, Yorks., woollen manufacturers, &c.

Bates T., 6, Back Thornhill Street, Lindley, Yorks., serge manufacturer.

Ainsworth J., Halifax, wool dealer.

Burton F. H., and Roberts G. A., Leeds and Holbeck, merchants and woollen manufacturers, as Z. Holfman and Co.

Lister S., Batley, yarn spinner.

Sargent G. H., Low Moor and Bradford, worsted coating manufacturer.

Mitchell J. and T., Rhodes Mill, Rochdale, cotton manufacturers.

Carter R. F., and G. S. Fiddes, Addle Street, London, and Belfast, linen manufacturers and dyers and finishers.

Howarth A. and R., cotton spinners, Moss Bridge Mills, Rochdale.

Audsley D., Halifax, rep manufacturer.

Rushworth F., Halifax, cloth finisher.

Bowden J., Chapel-en-le-Frith, cotton doubler.

Dodgson T., machinist, Colne Road, Burnley.

Barker T., cotton manufacturer, Burnley Lane, Burnley.

Champness J., dealer in sateens, High Street, Manchester.

Dividends.

Morrison J. (the younger), and Fowler O., Victoria Mills, Low Moor, Yorks. worsted manufacturers and commission weavers; first and final dividend of 2s. 3d. in the pound, at the offices of B. and E. Musgrave, public accountants, Victoria Chambers, Bank Street, Bradford.

Godfrey H., and Cooper R., St. Mary Street, Coventry, trimming manufacturers; a second and final dividend of 1s. in the pound, at the offices of E. E. Peirson, trustee, 46, Jordan Well, Coventry.

Taylor T., Boyer Street, Derby, elastic web manufacturer; a first and final dividend of 3s. in the pound, at the offices of A. Laing, trustee, Derby Commercial Bank, Derby.

Dissolutions of Partnership.

Clark J., Clark W. S., and Morland J., Northover, near Glastonbury, Somerset, sheep skin and Angora rug manufacturers.

Farrant J. S., and Stevens J., Earls Colne, Essex, drapers, tailors, &c.

Hill E., and Mills W., 12, New Brown Street, Manchester, woollen merchants

Pitman N. G., and Holliday J., 3, 4, and 5, Well Street, London, trimming manufacturers.

Simpkin J., Simpkin S. J., and Smith J., Hinckley, hosiery manufacturers.

Albrecht and Beanland, Bowling, near Bradford, stuff manufacturers.

Wright C. and Co., Tyldesley, Lancashire, cotton spinners.

Potter J. K., and Co., York Street, Manchester, calico printers.

Penrose J., and Kemp S., 15, Newington Causeway, Surrey, mantle manufacturers.

Watson J., and Watson John, Brownside, Lancaster, cotton manufacturers.

Eckersley C., Sanderson R. W. B., and Russell W. A., Barnfield Mills, Tyldesley, Lancashire, cotton spinners.

Petrie John and Co., engineers, Rochdale.

Rawlinson and Hirst, frilling millers, Lockwood, Huddersfield.

Bills of Sale.

Goldthorpe H., Washington Street, Girlington, Bradford, £ s. d.
wool washer 34 0 0 a.s.

Longman H., 170, Newington Butts, dyer 100 0 0

Archer F. W., Whitwell, machinist and machine owner 325 4 6

Bradley Margaret, Percy Villas, Upper Norwood, bead trimming maker 40 4 0 &c.

Cohner J., Charles Square, Hoxton, dealer in woollen cuttings 150 0 0

Cooke G., Millfield Terrace, Gateshead, draper 4,150 0 0 &c.

Thomas J., 24, Victoria Street, Bradford, woollorter 30 0 0

Whiteley Tom, 58, Belle Vue Road, Leeds, woollen manager 120 0 0 ab.s.

Frankland D., Wilkinson E., and Pilling B., Green Bridge Mill, Padiham, cotton manufacturers 400 0 0 ab.s.

James W. H., and Burton W., 64, George Street, Parade, Birmingham, frilling manufacturers 37 0 0

Hockin T. W., Woodstock Road, Finsbury Park, costume manufacturer 56 7 4

Key J., Cleethorpes Road, Great Grimsby, hosier and clothier 200 0 0 ab.s.

Mellor R. C., Ross Villa, New Brighton, formerly a cotton broker 120 0 0

PATENTS.

Specially compiled for "THE JOURNAL OF FABRICS AND TEXTILE INDUSTRIES" by G. G. M. HARDINGHAM, C.E., Fellow of the Institute of Patent Agents, 191, Fleet Street, London, E.C.

Applications for Letters Patent.

	No.
Combing machinery. H. W. Whitehead, Leeds	2nd April 1649
Cut Pile fabrics. J. H. Johnson (L. T. Lepage, France)	7th April 1769
Combing machines. J. C. Walker, Shipley	10th April 1806
Collars for spinning. W. Jackson, Hull	16th April 1915
Cutting fabrics. A. J. Boulton (G. Hoyer et Cie, Schonbeck, Germany)	17th April 1946
Carding engines. A. C. Henderson (L. A. Perin, 2, Boulevard de Strasbourg, Paris)	18th April 1970
Carding wool. H. J. Haddan (J. Benarzet, Paris)	19th April 1996
Carpets, &c. H. Fawcett, Kidderminster	24th April 2088

Combing machines. J. Thompson, Manchester	26th April 2109
Drawing, roving, and spinning machinery. W. Walker and A. Binns, Halifax	5th April 1717
Dabbing brushes. H. Portway, Bradford, and C. Walker, Shipley	6th April 1740
Double pile fabrics. J. H. Johnson (D. Diedrichs, Bourgoin, Isère, France)	6th April 1742
Drying woven fabrics. A. Annandale, Dunbar	7th April 1751
Extracting gum from fabrics. W. R. Lake (G.M.F. Forêt, Paris)	12th April 1866
Endless band knife machine for cutting fabrics. R. B. Sanson, London	26th April 2110
Fleece dividers. C. Pieper (G. T. Erben, Austria)	26th April 2107
Grinding fibres. J. Kerr, Church, Lancaster	12th April 1867
Hand-weaving devices. E. Wernicke, Berlin	17th April 1947
Knitting machinery. H. J. Haddan (C. Young, Chicago)	16th April 1919
Looms. T. Singleton, Over Darwen	14th April 1904
Looms. J. B. Greenhalgh, Whitefield	20th April 2014
Printing rollers. E. Earle, Manchester	5th April 1714
Pickers. J. Holding, Lower Broughton	7th April 1764
Plush fabrics. J. H. Cunliffe, Rochdale	11th April 1831
Pile fabrics. H. J. Haddan (F.A., Parellada, Spain)	12th April 1852
Pile fabrics. W. R. Lake (C. Coupland, Conn., U.S.A.)	17th April 1945
Padding apparatus. C. A. Paterson, Stirling	18th April 1958
Printing fabrics. W. Mather, Salford Iron Works	19th April 1978
Preparing machinery. J. Reynolds, Belfast	19th April 1999
Ring spinning and doubling frames. J. Young and E. Furness, Mellor	24th April 2059
Stentering and finishing machines. J. Smith, Renfrew	20th April 2004
Temples for looms. R. Bond, Bury	25th April 2096
Tying warps (machine for). J. P. Binns, Halifax	20th April 2098
Winding yarn and thread. J. Liddell, J. S. Brierley, S. H. Brierley, F. W. Hirst, and D. Hamer	14th April 1905

Grants of Provisional Protection for Six Months.

235	346	1018	1105	1130	1133	1148	1155
1194	1228	1253	1257	1259	1281	1297	1300
1307	1312	1318	1344	1388	1393	1402	1413
1414	1418	1435	1444	1445	1476	1486	1500
1527	1531	1534	1536	1544	1548	1572	1573
1582	1583	1588	1649	1711	1714	1717	1740
1742	1751	1764	1769	(All of 1883.)			

Notices to Proceed.

(Notice of opposition to the Sealing of a Patent must be given within Twenty-one days of the Notice to Proceed being advertised in the Commissioners of Patents' Journal.)

Combing machinery. J. H. Whitehead (Taylor and Wordsworth, Leeds)	13th Dec. 5958
Combing machines. F. Fairbank, Allerton	8th Feb. 691
Carding engines. R. Tatham and R. Sellers, Cleckheaton	20th Feb. 932
Canton crape, &c. N. Kinnagaya, Blackburn	24th Feb. 1111
Finishing machines for textile fabrics. L. E. Luzean Condrais, Paris	18th Dec. 6037
Glazing fabrics. S. Wells, Cannonbury, N.	29th Nov. 5674
Kiers for boiling fabrics. J. Dimmock, Over Darwen	23rd Dec. 6135
Knitting machinery. H. J. Haddan, Nottingham	24th Mar. 1527
Looms (pickers for). H. Tetlow and J. Holding, Lower Broughton	28th Nov. 5653
Looms. A. Smith, Bingley, Yorkshire	11th Dec. 5904
Looms. J. Irving, Barnsley	13th Dec. 5964
Looms. D. Eastwood, Luddendenfoot, Yorkshire	14th Dec. 5974
Looms. G. W. Grosvenor and J. Bedford	6th Jan. 92
Looms. J. D. Harris, Leicester	29th Mar. 1583
Mosaie fabrics. F. Walton, Twickenham	18th Dec. 6039
Oxidising fabrics, &c. C. D. Abel (G. Witz, Rouen, France)	11th Dec. 5914
Spinning fibres. F. Ripley, Bradford, Yorkshire	14th Dec. 5973
Spinning machinery. E. Tweedale, Accrington	18th Dec. 6044
Shearing fabrics, &c. C. D. Abel (A. Labrossie, Paris)	21st Dec. 6095
Shuttles. T. Brooks and T. Tweedale, Rawtenstall	28th Mar. 1573
Treatment of silk, &c. G. W. Von Nawrocki (M. Meister, New York)	7th Dec. 5839
Web forks and holders for looms. W. B. White, Colne	26th Jan. 432

Patents Sealed.

3746	4722	4823	4851	4856	4864	4882	4916
4918	4935	4959	4979	5063	5121	5175	5222
5245	5286	5330	5366	(All of 1882)			
221	315	493	503	(All of 1883)			

Patents on which the Stamp Duty of £50 has been paid.

William R. Lake, London, "An improved apparatus or machine for wetting or damping woven fabrics" A communication	1st April, 1880 1344
Henry Simon, Manchester, "Improvements in apparatus for breaking up or cutting wool burs" A communication	8th April, 1880 1430
George Vian, Paris, "Improvements in the process of extracting the fibres from textile plants, and especially those of the witica family" A communication	20th April, 1880 1609
Eugène Joseph Couty, Paris, "Improvements in apparatus or machinery for decorticating the textile or fibrous substances"	8th April, 1880 1446
Theodore Gaddum, Manchester, "Improvements in apparatus for combing fibrous materials" A communication	9th April, 1880 1460
Joseph Standring Dronsfield, Oldham, "Improvements in card grinding machines"	7th April, 1880 1415
John Frederick Harrison, Bradford, "Improvements in apparatus for treating wool"	8th April, 1880 1434
Andrè Lyon, Paris, "An improved apparatus to be used in the dyeing of silken fabrics"	9th April, 1880 1467
Andrè Lyon, Paris, "Improvements in instruments and machinery or apparatus for glazing and finishing silken fabrics"	10th April, 1880 1470
James Worrall, Manchester, "An improved mode of and apparatus for finishing cut pile fabrics"	10th May, 1880 1910
Alexander M. Clark, London, "Improvements in apparatus for preventing 'double' in spinning" A communication	16th April, 1880 1574
John McNaught and William McNaught, Rochdale, "Improvements in machinery for scouring and washing wool and other fibrous materials"	14th April, 1880 1519
Thomas Coltman, Leicester, "Improvements in knitting machinery"	16th April, 1880 1555
William Jenkinson, London, and J. F. Mayman, Dewsbury, "A new fabric for making horse cloths"	23rd April, 1880 1679

Patents on which the Stamp Duty of £100 has been paid

John L. Taylor and Robert Ramsden, both of Bolton, "Improvements in machinery for spinning and doubling cotton, silk, worsted, woollen, linen and other fibrous materials"	31st March, 1876 1397
James McKean and John McGrah, Laragh Mills, Monaghan, "Improvements in machinery for snipping or combing certain fibres, such as jute and hemp"	11th April, 1876 1540
Samuel O'Neill, London, "Improvements in weaving"	21st April, 1876 1675

Copyright of Designs.

(Registered during April, 1883.)

Class VI., Carpets.

396,188-91	Cooke, Sons and Co., London
396,418	Potter and Lewis, Kidderminster
396,457-58	Coates, Pullar and Co., Perth
396,581-82	Heyman and Jagger, Glasgow
397, 263	Coates, Pullar and Co., Perth

Class XI., Furnitures.

396,184-86	Salis Schwabe and Co., Manchester
396,228-30	Daniel Lee and Co., Manchester
396,484	E. Beswick and Co., Manchester
396,677-78	Rosendale Printing Co., Manchester
396,692-93	R. Dalglish Falconer, Manchester
396,695	George Andrew and Sons, Manchester
396,825-26	Salis Schwabe and Co., Manchester
397,005	D. Lee and Co., Manchester
397,031	Beith Stevenson and Co., Manchester
397,075	S. and F. Sternberg, Manchester
397,180-82	The Allander Printing Co., Glasgow
397,252	John Bennett and Sons, Manchester

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Notices.

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The Proprietors will feel greatly obliged if any of their readers in making enquiries of, or opening accounts with Advertisers in this paper, will kindly mention the *Journal of Fabrics and Textile Industries* as the source from whence they obtained their information.



Failures not always Evidence of Bad Management.



ACCORDING to a return furnished us, which will be found in another column, the number of failures in the United Kingdom, gazetted during the four weeks ending May 26th, was 852. The number in the corresponding four weeks of last year was 954, which shows a decline of 102. In the year 1881, during the same period the total was 1050, a decrease of 198. These facts show that,

notwithstanding the excessive competition both at home and abroad, the trade, on the whole in this country, is in an improving condition. There are innumerable causes for the failures in business that are continually taking place. Numbers of people—amongst whom may be enumerated many successful tradesmen and persons who are really unacquainted with the inner working of a business, seem to have an idea that nearly all failures that take place are caused through a lack of good management.

Writing on this question a contemporary says:—Some erroneously believe that all business failures, particularly in the manufacturing line, are the result of poor management. A moment's observation and thought should teach anyone that such is not the case. Much that operates against the success of

manufacturing enterprises cannot be well foreseen or even provided against. Take the case of a fire that destroys a manufacturing plant; no insurance that can be obtained will cover the indirect losses that will arise. Even the coming of a great panic which brings destruction to interests in every direction cannot well be foretold. Failures of creditors, too, often cannot be anticipated. Probably some will say that to trust a creditor who afterwards fails is an evidence of lack of business sagacity. That this is not always true is shown from the fact that losses of this character occur more or less with every prominent business house. Therefore, to maintain such a position, one would be forced to assert that there are no business men of sagacity, as, practically, all who credit suffer loss at one time or another. The position of creditors often shifts, so that at the time a credit is granted the purchaser may be good, but before date of payment he may be in a failing condition. Let us instance the case of a manufacturer supplying a purchaser with a line of machinery on long credit. At the time of the sale the purchaser is solvent, but afterwards he may take a partner who will embezzle the funds of the new concern and leave him bankrupt, so that when his obligations fall due he is unable to meet them. How could the seller foresee this state of affairs? Suppose that the latter sells to a solvent purchaser, whose property before payment is attached at the suit of a party wrongfully claiming an interest in it, and thereby the purchaser is unable to raise the funds to pay the bill; in such a case how can blame attach to the seller? A manufacturer may see dangerous times ahead in his business, but what can he do? Often he must keep on and take the loss, or allow his force of men to be scattered, and his plant to lie idle, and perhaps go to ruin. The simple truth is that there are circumstances surrounding many lines of business over which the parties most in interest have no control. It is easy enough to say that no one should allow himself to get into such a position. This is absurd. Every business is a greater or less risk. Often the greater the risk the more profitable the business. There have been times in the life of every prominent man of wealth when his affairs might have been engulfed in ruin. We could mention concerns in Chicago, whose names now figure prominently at the head of the list of our heavy capitalists, who, had a sudden adverse wave of trade struck them at certain times, ruin would have resulted. These instances are not rare, but common. Many, and perhaps most, failures could be averted, no doubt, by prudent forethought and careful management, but this is not universally true. It is a great injustice to charge all who fail with a lack of correct business qualifications. Our most successful men have, in many undertakings, signally failed at first, but afterwards retrieved their fortunes and made a grand success in life. There is a wide difference between the failures brought about by mismanagement and those occasioned by uncontrollable circumstances. Many a first-class business man, overtaken by misfortunes of the latter description, has suffered for years under the unjust imputation of being a poor manager. To a refined and sensitive nature such a charge is exceedingly galling, but in very many instances it has been a prime motor in spurring the unfortunate individual into renewed exertions to regain his lost ground, and vindicate his wrongly assailed reputation.

The Manufacture of Clouded Yarns.

A German technical journal describes an invention for the production of twine-like and clouded yarns. The inventor proposes to produce yarn which looks like two-coloured double yarn without really being twined, and also, by the application of a simple contrivance, to produce clouded yarns. With the apparatuses heretofore used for these purposes, the operation of uniting two or more slubbings, which were produced upon separate carding machines and different in colour as well as in quality, was pretty complicated and troublesome, and required strong slubbings. To avoid the trouble of uniting slubbings of different colour or material produced upon two cards, two carding machines, each provided with main-cylinder, stripper, clearer, flies, and lickers in, are so combined to one machine, that both cards deposit their carded wools jointly upon one common doffer. Thus only one fleece is formed, which, according to the colours of the wools put on is, *e. g.*, black on top and white underneath, or wool on top and cotton underneath.



Colonisation and Tariffs.



IN writing on Colonisation and Tariffs, with special reference to the Tonquin and Madagascar questions, the *Manchester Examiner and Times* says:—The activity displayed by the French Republic, as shown in the complications with Madagascar and the expedition to Tonquin, is exciting considerable apprehension in the minds of the British merchants. On the other hand, when we consider the enormous extent of territory held under the British sceptre in the form of dependencies and colonies, it is quite natural that the French should feel some irritation at any interference on our part with their schemes tending to the formation of a similar colonial empire. It is easy to understand that the difference between the two countries in their methods of treating third parties in respect to trade accounts for the indifference with which English conquests are viewed by neutral nations as compared with those attempted on the part of France. It is well known that wherever the English flag is planted, there and then free trade, or the equal right of trading, is made part of the conditions upon which enterprise may be carried on. In other words, Great Britain reserves no exclusive right of trading, nor does she give any preference to her own traders, over those of any other country. Hence it comes that the dominion of England, extended over countries semi-civilised, tends to bring capital and settled government into regions where trade may previously have been greatly checked for want of both, as well as through indigenous incapacity and inactivity.

Such nations as are at all desirous of emulating our example in the direction of foreign acquisitions would do well to learn that wherever English influence is felt in its undivided authority free-trade accompanies that power, and even though part of our Australian Colonies and Canada maintain tariffs, they are maintained against the mother country equally with other nations. This, however, is not the case with France. Take Algiers for example. We know that recently an enterprising firm in Glasgow established a mill near to Rouen, in order to manufacture goods for Algiers, which had previously been made in Glasgow, simply because the preference given to French productions entering the colony of Algiers enables French producers to conduct their operations with a chance of large profit, whilst the same goods, if manufactured in Glasgow, would be subject to a very high rate of duty on entering any Algerian port.

Under such circumstances the French need not be surprised that active operations on their part, for the establishment of French influence in such an important district as Tonquin, in order to further French trade, are viewed with great suspicion in this country, as in the advance of Russia in Asia, despite the difference which is recognised between a nation's extension of its boundaries, and the acquisition of distant territory for the purpose of developing its own trade. Our Foreign Office could not, perhaps, be better employed than in endeavouring to secure a general agreement amongst the European Powers, so that, whether we can or not secure free-trade between ourselves and them, at least, such new colonies shall offer a free and equal chance of trading facilities to all nations alike. We do not wish to be misunderstood. Although we possess by far the largest dependencies, and the greatest colonial empire of this or probably any former time, it is not desirable that we should enter into negotiations upon a basis involving a change in our trading policy. If we cannot secure the adoption of an equally sensible policy on the part of other countries holding territory widely dispersed, it is at least a strong argument in favour of securing similar treatment. So far as the French expedition to Tonquin is concerned, we think that

the British Government might go even a step further, and intimate that we should permit no permanent occupation of Tonquin with the view to the acquisition by France of a great dependency formed out of the districts extending from Tonquin to and including Yun-nan, portions of Upper Burmah, Anam and the Shan territory (unless upon equal rights of trading). There would seem little doubt but that a slice of territory at least half a million square miles in extent could be secured in this direction bordering upon Thibet, Assam, British Burmah, and the Kingdom of Siam. The whole of the country is penetrated with waterways, notably the Red River, from the Gulf of Tonquin, the Salwin and the Mekhong, as well as the upper reaches of the Irrawaddy. A straight line drawn from Calcutta through the cities of Yun-nan to Hankow would indicate a route by which would be avoided the tedious circumnavigation of further India and Southern China, thus saving three thousand miles. The whole of the district so traversed, including Upper Burmah, Anam, and the kingdom of Siam, being, so far as trading purposes are concerned, comparatively undeveloped, would afford great scope for the extension of trade within its own boundaries, and also in Western China. It is consequently of the highest importance that our Government should understand clearly the meaning of French projects in this direction. If the French have made up their minds to make of this district a lesser India, we ought at least to know the terms upon which our trade can be conducted therewith, supposing that France is successful in securing the territory. We can scarcely afford to permit that our intercourse with China should be threatened in this direction unless we have a clear agreement for equal rights and conditions of trade, and it may be well that this should be understood at the very outset of the present operations.

Manufacture of Ornamental Pile Fabrics.

For an improvement in the manufacture of ornamental pile fabrics, a patent was recently taken out which has only received provisional protection. The object is to make a fabric wherein the pile is produced at different levels or in both loops, and cut or velvet pile arranged in any desired forms or figure, so that a rich ornamental effect is obtained. In carrying out the invention, a pile fabric is made in any of the ordinary methods. A hot plate or roller is then taken, upon which an ornamental design is cut, and this is pressed forcibly upon the fabric so as to force down to a low level those portions of the pile which are against the projecting portions of the plate or roller. The portions of the pile on the fabric which were not depressed by the plate or roller are then cut. The fabric is next submitted to the action of liquid or vapour blown through the fabric, or the material is immersed in water, or, where the fabric is dyed, the dye liquor will answer the same purpose. The portions of the pile which were depressed are thereby caused to rise, and an ornamental effect is produced on the fabric corresponding to the design upon the plate or roller.

Preventing the Radiation of Heat from Steam Boilers and Pipes.

An invention was recently patented which consists principally in the employment of a layer of cork around steam boilers, &c., to prevent radiation of heat. In carrying out the process, the surface of the boiler or pipe is first coated with a layer of ordinary composition, which is put on thinner than is usual; over this is laid a coating, an inch thick, of ground cork, the same being pressed closely, and over this is laid a second coating of composition, so that there is a cavity, as it were, of an inch thick between the two layers of composition; this is filled in with the ground cork. It is well known that cork is a non-conductor of heat, and this mode of boiler covering ought to answer admirably. In treating pipes which require to be perfectly surrounded by the non-conducting material, the ground cork is packed in long tubular canvass bags, which are coiled around the pipes, as there is a difficulty in making the cork adhere to a pipe when in the loose state.

Chromate of Lime in Dyeing.

Mr. Wolff's process is to coat one side of the fabric with a layer of chromate of lime, and then to partially expose it to the action of the actinic light rays. This is accomplished by allowing the material to pass over a glass cylinder, illuminated from within, and on the outer side of which the transparent or negative patterns are fastened. The chromate of lime not acted upon by the light, remaining soluble, is afterwards removed by washing.

Japanese Figured Silks.



WE give an extract from Dr. Dresser's valuable work, *Japan: Its Architecture and Art Manufactures*, which to designers generally and to calico printers, &c., must prove interesting. The book, which was published a short time ago, contains a fund of information referring to the Japanese and their manufactures. In describing the manufacture of Japanese silks, the writer says—I must now consider the means by which expensive fabrics, such as silks and silk crapes, receive their patterns, but as we have no process in any way analogous to the Japanese method, so far as I am aware, I feel the task of describing it most difficult, and in the whole of these descriptions of processes I have, more or less, to repeat what I have already said briefly in a paper read some little time since before the Society of Arts; but there I could not go into matters so fully as I can in the present work. Now, as to the means of figuring fabrics, the silk is first given to an artist, who draws the pattern upon it as carefully as if he were designing an historical cartoon. The pieces of silk figured by the process which I am now describing are about 40 ft. in length by 12 in. in width, and on the entire fabric the artist places either a varying or a repeating pattern, as is required. This pattern he draws with a preparation of indigo, which can readily be removed from the fabric by washing; and he not only gives outline but adds depth, shade, or whatever may enable him to produce a desired effect. Thus, at the outset, the whole pattern is drawn by hand, and this we should think a sufficiently costly mode of giving figure to a fabric, but in the process which we are considering the work is only now in its first stage of production. The artist, having finished his work, hands the fabric to a workman who has prepared a material of a most tenacious and ductile nature—a sort of glutinous bird lime. This mucous matter he forms by boiling the finest possible rice-flour with lime water of a particular strength. Having previously prepared this glutinous matter, he warms it slightly, and rubs it on a board with a kind of putty knife, but it appears to me as difficult to rub as warm indiarubber would be. A piece of this bird-lime about the size of a small pea is placed on the end of a wooden point or skewer, and a portion of the fabric is stretched flat by bowed pieces of cane being placed beneath it. Thus all is ready for work. Holding the stretched fabric over a small charcoal fire, with the left hand under the cloth, so as to raise any portion of it that may be necessary, and with the point of wood, on which is the little ball of plastic matter, in the other hand, the operator begins by touching the fabric at some point of the pattern, say at the base of a leaf, with the mucous ball, which at once adheres to the cloth. The ball of mucus is now drawn to some little distance from the surface of the fabric, say a foot, but between the fabric and the ball there now intervenes a thread of this mucus, for so ductile is the material, and so sticky, that it will adhere to anything, and draw out to a thread some yards in length without breaking. By certain dexterous movements of the right hand, in which the wooden point supporting the plastic matter is held, and by the middle finger of the left hand raising the cloth when necessary, a thread of the plastic matter is being constantly formed, and is as constantly dropped upon the fabric as an outline to the pattern. With the utmost skill leaves, flowers, and even the small parts of the flowers, as the stamens, are outlined with this mucus, which falls upon the cloth as a thread of about the thickness of an ordinary pin-shank. The whole pattern, however small its detail, or however finely-serrated its leaves, is thus outlined. But as this outline is not sufficient, means are adopted for thickening it. Hence a conical tube of oiled paper is formed of about four inches in length, and with an orifice at its broad end of about an inch in diameter. At the small end this tube terminates in a tin nozzle, in the apex of which is an opening such as would be made by a fine darning needle. This tube is charged with the mucus, and through the fine opening in the tin nozzle the plastic matter is so pressed as to thicken (on the outside) and also to raise the outline already formed. All this has afforded a means of preventing the “running” of dyes which are now to be used; and when thus prepared the fabric is ready for the next stage of the process.

This consists in the painting with dyes of various colours of the spaces enclosed by the little banks of now dry, but formerly mucous, material; and a care is bestowed upon this painting such as would suffice for the production of a highly-finished water-colour drawing. In this way the pattern is wrought. The dyes having dried, the colours are exposed for about six minutes to the action of steam in a steam bath (which is a sort of kitchen “steamer” placed over a pot of boiling water), and then the mucous matter is removed by the fabric being gently rinsed in a vat of clean water. If the ground is to be coloured the whole of the figures are now painted over by a “resist” and the fabric is then dipped in the dye vat, the ground receiving its colour as it is unprotected. Landscapes, flowers, birds, and groups of various kinds are produced by this method, and some interesting sketches, which are often mistaken in England, for pure hand-drawings, are wrought by this semi-mechanical method. Many fabrics are made by combinations of these processes—thus some are in part stencilled and in part wrought by this last mentioned process. The means of producing an effect just described appear to us the most laborious that could well be imagined; yet, while the method is laborious, the results achieved are in the highest degree satisfactory, and nothing could be more welcome than some of the effects thus laboriously obtained. On a length of fabric figured by this strange process we have a series of panels, some fan-shaped, and some of other strange forms, distributed over the surface. In each of these shapes is painted, with all the tenderness of hand-work, an exquisite group of flowers, a few birds at rest or in flight, or some other pretty objects, while on the ground are dispersed blossoms, sprays, spiders' webs, and insects in groups of singular interest. No purely mechanical method, such as we employ, could possibly produce the effects gained by this mode of work, and while we may be disposed to talk of “wasted labour” and “laborious methods,” the Japanese yet succeed in producing by their process effects that all artists esteem, whereas but little work yet achieved by our calico printers has satisfied persons with art knowledge and taste. The Japanese know other methods of figuring fabrics, as I have already said, but the processes described are those which alone require our notice, for it is these only by which artistic results are achieved; and while we cannot hope that our manufacturers will follow the Japanese methods, we yet commend to their notice the artistic character of the works produced in Japan. The principal seat of the cotton-printing industry is Nagoya and near towns, but the more expensive fabrics, as silks, are chiefly in Kioto.—*Japan: Its Architecture and Art Manufacture*. By Christopher Dresser, Ph.D., F.L.S., &c.

Printing Processes.

In printing the azo colours on wool the best results are obtained, says the *Farb. Must. Zeit.* by dissolving the colour in ten parts of water, thickening, and adding a solution of two parts alum and one and a half sodium phosphate in four parts of water. For the preparation of mixed goods (cotton and wool), a case in mordant is recommended. The following is a receipt for aniline black; (a) 25 parts aniline oil are mixed cold with 20 parts nitric acid at 38 deg. B. (b) 50 parts starch, 30 tragacanth, 35 acetic acid, and 20 potassium chlorate, are boiled with 200 parts of water. (c) A solution of ammonium vanadate equal to 2 per cent. of the aniline oil in (a) is mixed with (a) and (b). The mixture is printed, aged, and the goods worked off in a slightly alkaline bath of potassium chromate.

A deputation, including several Members of Parliament, had an interview with the President of the Board of Trade a few days ago, on the subject of the Patents Bill. In reply to the various points which were urged, Mr. Chamberlain said the Government would accept such amendments as commended themselves to the Grand Committee. The question of examination for novelty was one of principle, and the Government had decided to reject it, not being satisfied with the working of the system in Germany and America. Provision was made regulating fees hereafter without further legislation. He thought the general feeling of the House of Commons was against extending the duration of a patent from 14 to 17 years.

The Bleaching of Jute and Jute Fabrics.

A Belgian paper has an able article on jute and its peculiarities, especially its liability to deteriorate during the sea voyage, the chemical reasons for this phenomenon and the fact that for these very reasons jute goods made in India and shipped to Europe and America are superior in quality to those made in the latter two from raw jute imported from India. The article winds up with the ensuing recipe for bleaching jute and jute goods, based upon the peculiarities of the fibre named:—

1st. The jute goods to be bleached are first washed at a temperature of 70 to 80 degrees with a weak alkaline solution such as water-glass, soda, or borax.

2nd. After emerging from this washing process the goods pass into the bleaching liquor, a solution of hypochlorite of sodium obtained by decomposing chloride of lime by means of an equal amount of soda. This liquid should not contain over 1 per cent of active chloride, the most suitable degree being 0.7 per cent., which corresponds to 2 parts of chloride of lime to about 100 parts of water.

The presence of the soda prevents completely the formation of chlorated products of the fibre.

3rd. After the goods shall have been thoroughly washed, they are put into cool diluted hydrochloric acid, containing a small portion of sulphuric acid. This treatment purposes doing away with the basis combinations that might give rise later on to a colouration of the fibre through the action of the oxidizing agents, and in order to dissolve the salts of iron the fabrics thus treated are of a pale cream colour, and have a handsome soft and glossy appearance. If they are to be dyed, they may forthwith pass into the dyeing bath after being thoroughly washed; but if they are to be printed they have still to undergo another operation.

4th. They are immersed in a bath of bisulphite of soda containing 1 to 2 degrees of sulphuric acid after which they are passed between rollers and wrung, the liquid dripping back into the bath used. Subsequently the goods are left at rest during two or three hours and finally dried between steam heated cylinders. By doing so all the sulphuric acid disappears and the goods are uniformly impregnated with sulphite of soda. This salt later on prevents the oxidizing and destructive effect of steaming on the fibre without in the least counteracting the development of the printed colours under the steaming process. Besides, the whiteness of the goods is still increased through this treatment with bisulphite.

The loss of weight sustained by the goods does not exceed 7 to 8 per cent., and the loss of tensile strength is about 10 per cent. The cost of bleaching is not over 25 centimes per kilo (2½ cents American per pound.)

Jute may also be completely bleached by suspending the same over phosphorous in moist air and by means of oxygenated water, but the action of these agents is not easily controlled.

The treatment with either water or steam at a temperature of 120 to 130 degrees destroys the fibres altogether and transforms the same into soluble products. This is also the case if jute be treated with a solution of acetate of soda heating it, when acetic acid is distilled, which is an indication that the jute is being decomposed and that acids are formed. The presence of sulphite of soda, even in small quantity, prevents such decomposition, which is due to the well known combination of this salt with the aldehydes at first formed through the action of oxidizing agents on the jute.

Indigo Printing.

Mr. J. Ribbert's process is as follows:—Having soaked the indigo in caustic soda ley, it is ground, then mixed with water and dextrine to a paste, and treated with dry caustic soda, taking care that the temperature does not rise above 25 deg. R. Cloth mordanted with grape sugar is printed with this mixture, dried and steamed for about five minutes in a continuous steaming apparatus, whereby the indigo is reduced. In the subsequent passage through water the indigo is oxidised for 30 minutes, and the cloth dried. For 2,000 g. indigo, 400 g. caustic soda, 500 g. dextrine, 6,800 g. water, and 26 g. mordant for cloth are required.

The Cotton Industries of the Southern States of America.

The history of manufactures affords no more striking record than the progress of the cotton industry in the Southern States of America. Next year, exactly a century will have elapsed since the first six bales of cotton ever shipped from America were confiscated at Liverpool, the Custom-house officials not believing that so much cotton was raised in America. Now the export of cotton from the United States to great Britain amounts to no less than 80,000 bales in a single week. Statistics just issued, indeed, show that since last September, the beginning of the crop year, 1,763,000 bales of cotton have arrived in British ports from America alone. In two years the South has raised about 12,000,000 bales. It is stated that capitalists secure 10 per cent. per annum for their funds at the West, but cotton manufactories in the South have paid as high as 20 per cent., while 12 and 15 per cent. are by no means uncommon returns where the industry has been well established. Georgia has made the most rapid advances in the cotton growth and manufacture. There is one establishment in Columbus employing 2,200 operatives, and 53 mills are in operation in various parts of the State, while the total number of men employed is upwards of 10,000, being an increase of 40 per cent. in ten years. The *Times* commenting on the progress chronicled above, says a remarkable change is now rapidly taking place in the United States, which threatens before long to rob New England of its long-continued supremacy in the cotton manufacture, in consequence of the increasing competition of the Southern States, which for many economic reasons are driving the Northern products out of the Mississippi valley. Georgia takes the lead in this new movement, and there are abundant signs, not only that a powerful cotton industry will be built up in the south, but that capital to a large extent is being directed into this new channel. One of the powerful factors in this change is, that it has come to be recognised that cotton mills have a better chance of success when surrounded by cotton belds than when they are situated a long distance off, with the accompanying expenses of transportation. Another point is, that labour is paid at a much lower rate in the south, a remnant of the old system of slavery, which, when it came to an end, left behind it a legacy of badly paid labour. To compete with the cheap black labour, which was on the ground waiting to be employed, it was necessary for the poor whites to accept the same rate of wages and adopt the same coarse, cheap mode of living as was in vogue among the negroes. Although for a considerable time these poor whites were looked upon with scorn by the old aristocratic slaveholders, by whom they were dubbed "crackers," it is on them mainly that the present and future prosperity of the Southern cotton manufacture depends, as the rate of pay effectively prevents any immigration on the part of the skilled northern hands, who receive on an average \$85 per annum more than the southern workmen. The matter of transport, too, is very important. As the cotton is harvested in the immediate neighbourhood of the southern mills, that item may be eliminated from the cost of production, though, of course, the freight of the manufactured article has to be considered. Even under this head, it is very much less than that of the north, as the railways in the Southern States were constructed with cheaper labour at the commencement, while they run at less speed than those of the north, and are never hindered during the winter by snow and adverse weather. The same remark applies to the water power of the factories, which in the south is unfailing, the mountains not having been denuded of trees, nor the agricultural land stripped of its forests. The northern mills have a speciality of finer goods, which they are likely to keep for some time, although there is no real reason why the south, with equally good machinery and intelligent operatives, should not become a formidable competitor in this branch also.

The Nettle Fibre.

Mr. A. Chevalier of Flixton has drawn the attention of the Manchester Chamber of Commerce to some samples of nettle fibre that he has forwarded, and which, he affirms, can be employed either as a substitute for cotton, or as a valuable adjunct to cotton textiles. The samples sent show the fibre in various stages of manufacture. They can be inspected at the offices of the chamber. Writing to a contemporary, Mr. Chevalier says the utilisation of waste and neglected materials cannot fail to be a matter of interest to manufacturers generally, and in the present instance to spinners especially. The use of the nettle, or urtica, was certainly not unknown in former times; but it was thrown into the shade by fibres of an apparently greater value for commercial interchange. Many years ago, at the cotton famine period, sundry experiments led me to believe in the feasibility of employing the fibre of this plant in part substitution of cotton, and no doubt it might readily have been so used had the necessity continued. A residence in the country has lately, however, demonstrated to me the extreme abundance of the material, and experiments resumed after a long lapse of time have convinced me that the material can be easily brought into a marketable state. Time and appliances fail me to produce the article in considerable quantities, although that can easily be effected, and it will afford me much gratification to communicate with anyone desirous of trying its application.

Nottingham Exports to the United States.

The report of Mr. Jasper Smith, commercial agent to the United States Government for the Nottingham district, upon the exports from this consular district to the United States for the year ending September, 1882, which has just been issued, shows that the total value of them was 9,774,548.65dols., being an increase of 1,307,244.47dols. upon the previous year. He states that as the business of the year ending September 30th, 1881, was a large advance upon that of any previous year, he did not expect this increase. During the last quarter there was a small decrease in the shipments, amounting to 104,794.96dols. In lace goods there was a falling off of 539,880dols., but there was an increase in the article of hosiery of 149,313dols. In salted skins there had been an increase from 364,369.37dols. to 687,090.65dols., and the export of china and earthenware had advanced from 1,524dols. to 12,763dols., the increase in both cases being shipments from Derby, at which place he had asked the privilege of establishing an agency. As the trade of the Nottingham district had increased more than threefold in the last five years he does not anticipate any enlargement in the immediate future. The following is a list of the articles exported and the total value for the year:—Lace goods, 7,228,684dols.; hosiery, 1,252,834dols.; muslins, 44,541.50dols.; linens, 96,872.10dols.; white goods, 23,953dols.; crape, 17,631.50dols.; elastic goods, 122,493.50dols.; machinery, 48,017.50dols.; salted skins, 687,090.65dols.; dyed skins, 1,300dols.; leather, 96,744.64dols.; venetian red, 6,545dols.; ale, 3,090dols.; terre alba, 1,440dols.; silk, 8,798.20dols.; oxide of iron, 16,200dols.; cottons, 71,652dols.; china and earthenware, 12,763dols.; oil paintings, 2,560dols.; colcothar, 3,153dols.; miscellaneous, 28,185dols.; total, 9,774,548.65dols.

Trade Prospects for the Coming Season.

The prospects for the coming season are being discussed as to the most likely goods that are expected to be in demand, a good deal of despondency prevailing in the broad silk departments as to future chances of trade. But although broad silks of a plain description are not likely to be in request, there is certainly a feeling for velvet and velvet mixed goods. Many of the latter, which have ever been made up in the course of the present season look remarkably well when blended with other materials, and if these were produced freely and in greater variety instead of the simple stripes which now mostly prevail, there is every reason to think they would sell, and though nothing could be prettier or more effective than the former, yet a larger assortment of different styles would doubtless be appreciated to an increased extent; and where a lady now adopts only one of a marked style, she might be induced to take up two or more of something different.

Some capital broad-cloths have been shown of late in low goods appropriate for the winter, in the 50-inch goods, which are now so largely used by women and children, the neat styles being considered the best for ordinary purposes. The light-weighted twilled goods of Bradford production that have sold very freely during the present season, although not adapted for women's ulsters, jackets, or cloaks, and the heavier uses and appliances, are yet very appropriate for dresses, and in this direction they will be doubtless found useful during the coming season.

South of England Wool Sales.—1883.

The following dates are fixed for these Sales:—

Friday.....	June 29..	Andover.....	Messrs. Ellen and Son.
Saturday.....	" 30..	Havant	Messrs. Wyatt and Son.
"	" 30..	Chichester....	Messrs. Wyatt and Hobgen.
Monday	July 2..	Swinden.....	Mr. Deacon.
Tuesday	" 3..	Alton	Mr. J. A. Eggar.
"	" 3..	Basingstoke ..	Messrs. Raynbird and Sons.
Wednesday ..	" 4..	Winchester ..	Mr. James Harris.
Thursday	" 5..	Newport, I. W.	Mr. H. J. Way.
Friday	" 6..	Salisbury	Messrs. Waters and Rawlence.
"	" 6..	Dorchester....	Messrs. Duke and Son.
"	" 6..	Dorchester....	Mr. T. Ensor.
Saturday	" 7..	Blandford	Mr. T. Ensor.
Monday	" 9..	Wallingford ..	Messrs. Franklin and Gale.
Tuesday.....	" 10..	Devizes	Messrs. Marsh and Dawes.
Wednesday ..	" 11..	Marlborough..	Messrs. Lavington and Jeans.

Photographs upon Woven Fabrics.

An invention, relating to the production of photographs upon woven fabrics, has been brought under notice. The patent has also for its object the preparing or treating of the said woven fabrics in such a manner that they will be protected from the action of damp, air, and from other atmospheric influences, and will be in a proper condition for receiving oil colour on their surface. The process for treating the fabric for the purposes described is as follows:—The fabric is stretched on a suitable frame and coated with wax or equivalent fatty substance on the front or picture surface until it appears entirely smooth and compact. After the coating of wax has become hard, the other or reverse side of the fabric is coated with varnish, the latter combining with the wax which has penetrated the fabric. By this process the fabric is effectually protected from atmospheric influences; it is rendered as dense, and non-absorbent as ordinary painters' canvas prepared for painting, and the clearness and depth of the photographic tone is increased to such a degree that the effect produced excels that of photographs on albumenized paper. The fabric may ultimately be painted with oil colours and varnished, and treated in the same manner as ordinary oil paintings.

Trade on the Continent.

The "Jacquard," reporting at the end of May, is unable to describe the position of the woollen industries in France as showing an actual improvement, the present being the dull season, and production and trade being very much restricted in consequence. Plain black goods still appear to be most steadily demanded. The good crop prospects, however, have increased the confidence of manufacturers, but on the other hand, merchants are utilising the adversities of France in the far East as a reason for offering for fabrics prices which are described as "ridiculously low." Meanwhile the German manufacturers are said to be very busy, especially the Rhenish Silesian producers. In Austria also business in the woollen trade is said to continue relatively brisk, and in Russia the manufacturers are reported to be in an "excellent" position.

Commercial Failures.

According to *Kemp's Mercantile Gazette*, the number of failures in England and Wales gazetted during the four weeks ending Saturday, May 26th, was 760. The number in the corresponding four weeks of last year was 868, showing a decrease of 108, being a net decrease, in 1883, to date, of 184.

The failures were distributed among the following trades; and for comparison, we give the number in each, in the corresponding weeks in 1881 and 1882:—

	1883	1882	1881
Building Trades	74	97	106
Chemists and Druggists	5	6	5
Coal and Mining Trades	11	24	17
Corn and Cattle	10	17	13
Drapery Trades	71	76	88
Earthenware Trades	8	7	7
Farmers	32	28	75
Furniture and Upholstery Trades	22	17	13
Grocery and Provision Trades	143	172	201
Hardware and Metal Trades	27	28	31
Iron and Steel Trades	30	32	23
Jewellery and Fancy Trades	20	35	28
Leather and Coach Trades	41	54	52
Merchants, Brokers, and Agents	75	81	101
Printing and Stationery Trades	14	11	16
Wine, Spirit, and Beer Trades	88	86	92
Miscellaneous	89	97	101
Totals for England and Wales—	760	868	969
Scotland	76	67	54
Ireland	16	19	27

Totals for United Kingdom— 852 954 1050

The number of Bills of Sale published in England and Wales for the four weeks ending Saturday, May 26th, was 972. The number in the corresponding four weeks of last year, was 3,807, showing a decrease of 2,835, being a net decrease, in 1883, to date, of 15,604.



ORIGINAL DESIGNS.

The first of our designs, by Mr. W. Tait, 34, Carter Street, Greenheys, Manchester, represents a border for a linen table cover of a fine quality. We have no doubt this quaint design will be of service to our subscribers in the linen branch of the textile trades.

Our second plate shows a design for worsted or cotton dress goods; it has been designed by Mr. R. Lord, 3, Gerrard Street, Halifax.

Our third plate represents a design for a tapestry fabric, the colouring of which should be ground—straw; the scroll—light olive green; the flowers should be shuttled in six different bright shades of colour; the whole shaded with a rich deep brown warp. This design has also been drawn by Mr. R. Lord.

. We beg to inform manufacturers and others that adaptations of designs, published in the "Journal of Fabrics and Textile Industries," can be made at the Office by experienced Designers, and that Original Designs can also be furnished at moderate charges.

We beg to inform Manufacturers and Designers of all classes of Textile Fabrics that we can now furnish the Designs, which have been issued in the back numbers of this Journal, bound in a neat cover. We have had 500 sets of these reprinted, for a part of which orders have been already taken. The Designs are specially adapted for Carpets, Tapestries, Table Covers, Damasks, Cretonnes, Muslins, Laces, Embossed Velvets, Linens, Quilts, Toilet Covers, Calico Prints, Silks, Stuffs, Felts, Curtains, Figured Braids, and a variety of other Fabrics. We shall be pleased to forward copies (carriage paid) on receipt of 10s. 6d. each, to any part of the United Kingdom, and for 11s. to any country abroad.

MONTHLY TRADE REPORTS.

Wool.—At the London wool sales there has been a brisk competition for most classes of foreign wools, at prices, if anything, slightly in advance of the last sales. Medium and low cross-breeds sold especially well. Botany also was in increased demand, at an advance in prices. In the Scotch district wools have been dull of sale, with prices in favour of buyers. This has been especially the case in the better classes, which droop in sympathy with English wools. In Bradford and Halifax trade has been of a slow and dragging nature throughout the month. Values on the whole have kept fairly steady, although a slight decline has taken place in the stapled wools. Botany wools have kept tolerable firm, in sympathy with the London sales. In the yarn branch, spinners of the better classes have been fairly well employed, in other descriptions the business passing has been of a hand to mouth character. The piece trade has been of a more satisfactory nature for home account; the export branch has not been good, as the hostile tariffs make it increasingly difficult to sell at a profit.

Cotton.—Business in the market during the past month has been almost uniformly dull. There has been a fair demand during the earlier portion, but upon the approach of the Whitsuntide holidays, a disinclination to transact business was manifested, which, coupled with the fact that, up to the 11th ult., buyers had purchased to meet their wants, caused trade to

fall off considerably. In the piece branches a generally dull tone has been experienced; the margin for profit in the cloth is still so small that manufacturers are much discouraged. The heavier classes of fabrics have been dull of sale, with a slight weakness in prices, but the lighter makes have slightly improved in demand. Prices for yarns have kept tolerably firm, and a fair demand, principally for export, has been experienced. The home trade demand has been rather slow.

Woollen.—During the past month trade has been of a rather uneven character. At Leeds in the better classes of cloths business has been rather brisk, and the lower sorts have met with a fair sale; prices have kept firm. At Huddersfield business has been of a dull nature, the effects of the recent strike are still being felt, and the prospects of this district are in consequence greatly below the average for this time of the year. In the Scotch districts trade has been of an improving nature and prices have kept firm. In the local wool markets a fair business has been passing at firm rates.

Linen.—There has been a slight improvement in the tone of the linen trade during the month. Yarns has been in rather better demand, and prices have had a hardening tendency. In jute a steady business has been passing; although this branch is not so brisk as it was a few weeks ago, still there is a hopeful feeling in the market as stocks of goods are light. Prices have remained moderately firm. In the flax branch a fair business has been done at hardening rates.

Lace.—There has been a want of animation in this branch of our manufacture. A very slight improvement may have taken place during the month, but still the demand is less than is usual at this time of the year. The brilliant weather of the latter part of May influenced business slightly, and a rather better feeling prevades the market. Coloured goods have been in request to a moderate degree; and a fair demand has been experienced for some kinds of cotton laces and trimmings. The curtain branch still remains in a very unsatisfactory state.

Carpets.—Business during the past month, has been of a dragging nature; some few firms have been fairly busy, but on the whole trade is of an unsatisfactory character. Tapestry carpets have been in slow demand, and there seem few signs of improvement in this department. In the Brussels branch a moderate business has been passing, but at prices rather unremunerative. In carpet yarns there has been little trade done.

The forthcoming Huddersfield Industrial Exhibition.

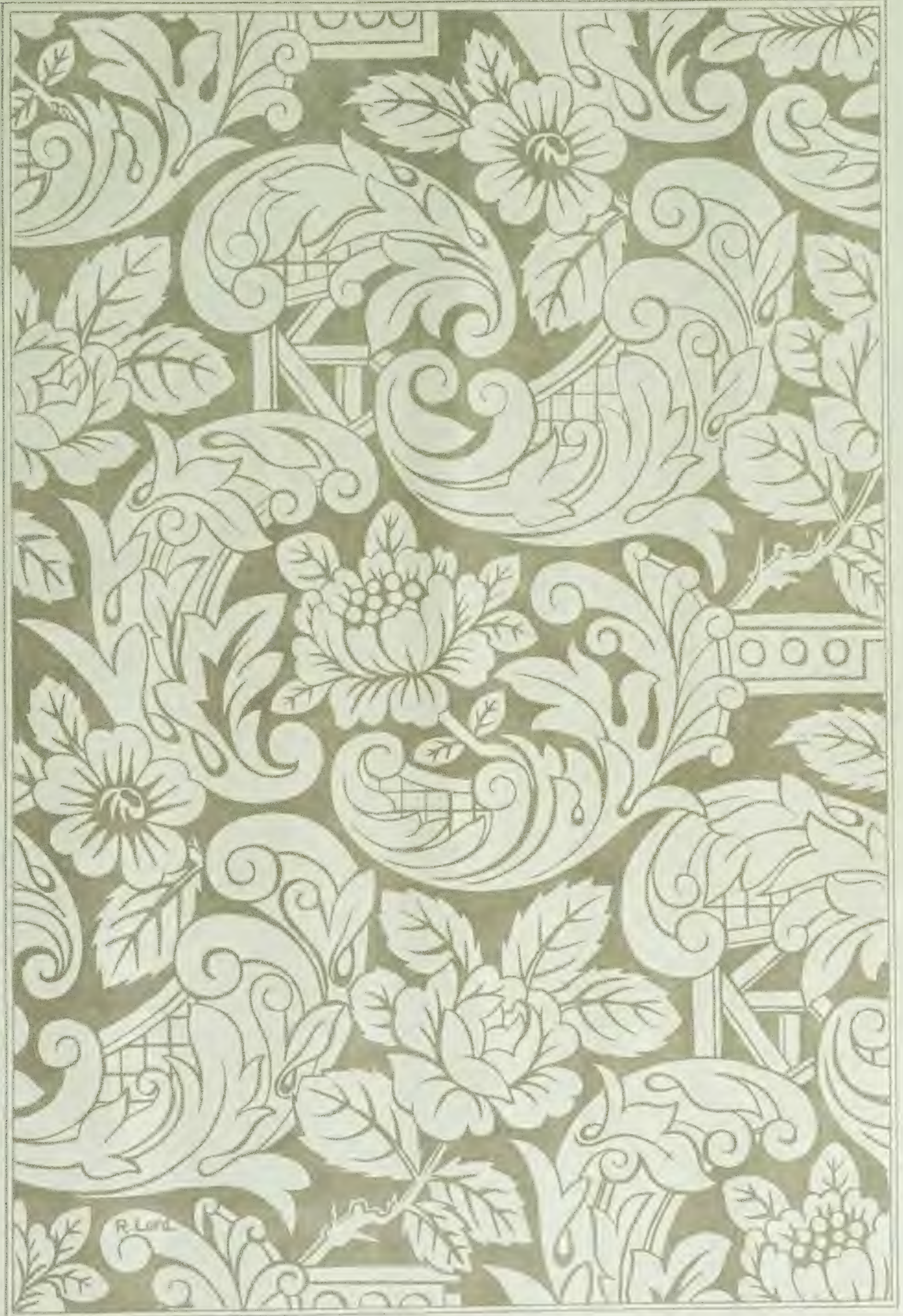
In a few days the Fine Art and Industrial Exhibition at Huddersfield will be opened to the public. The promoters are most sanguine of making the venture a decided success, and, judging by the number of exhibits, the affair ought not to be second to the late exhibition at Bradford. The trade of the Huddersfield district will naturally take a front rank. Machinery, employed in cotton, woollen, and worsted manufactories, is to be unusually rich and varied. Oldham, Leeds, Bradford, and Huddersfield contribute a fair quota to the stock, so that the ground floor of the buildings are sure to ring pretty loud with the whirr and crash of spinning frames, looms, winders, combs, and washers from some of the best and most celebrated workshops in the United Kingdom. Several recent inventions and improvements will find a place in the exhibition, and people may gaze their fill day after day at all the wonders and uses claimed for them by their respective owners. Of tissues and fabrics there will be an elaborate show. This department has special interest, for it will give to some means of contrasting our advances in dyeing and finishing with those of manufacturers on the Continent, as well as of judging whether or not the late agitation for change in machinery and style has had much influence with Yorkshiremen. Next, perhaps, in importance comes the collection of scientific instruments. Chemical and physical appliances are to be represented, but a great deal of their attraction will be absorbed in the review of electrical progress. What with a miniature telephonic exchange, a comprehensive assortment of telegraphic instruments, and codes of signalling, historically complete from the days of Troy to the days of heliograph, there will seem small chance of converting visitors to a Ruskinian belief in the secondary importance of science.



LINEN TABLE COVER BORDER.



DRESS GOODS.

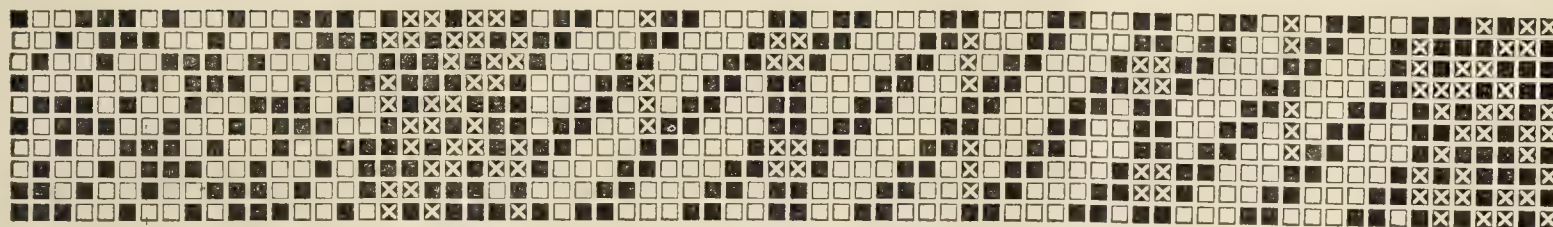


TAPESTRY.

ORIGINAL DESIGNS.

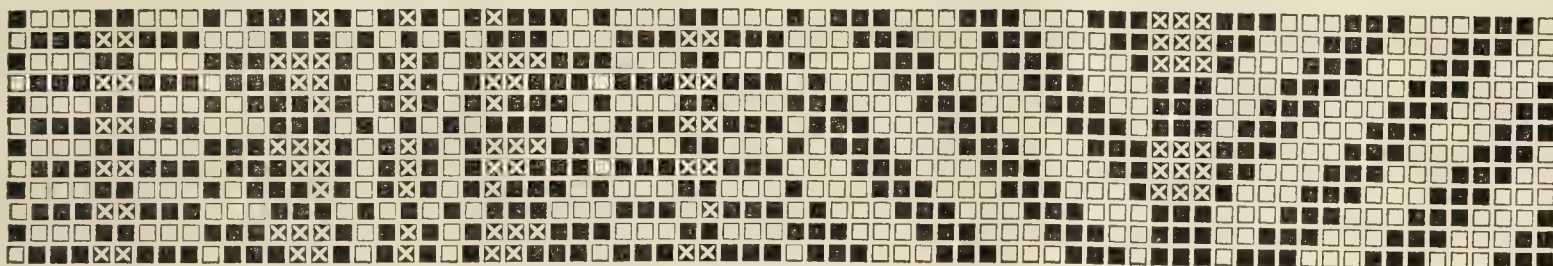
Shirtings, Gingham, &c.

No. 73.



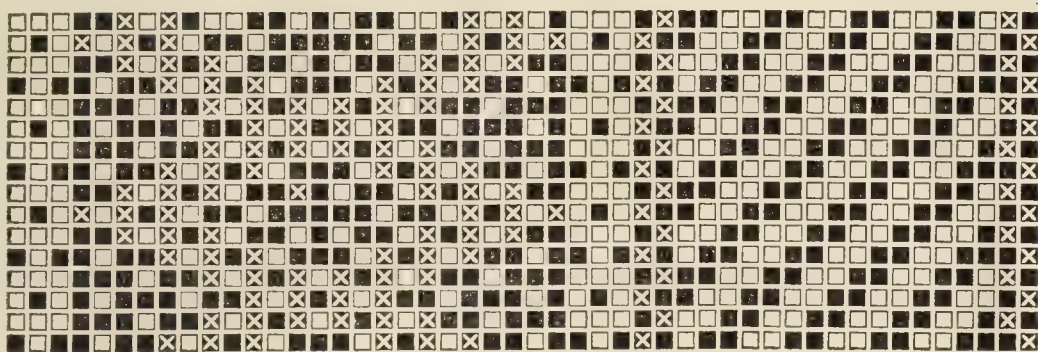
Design.

No. 74.



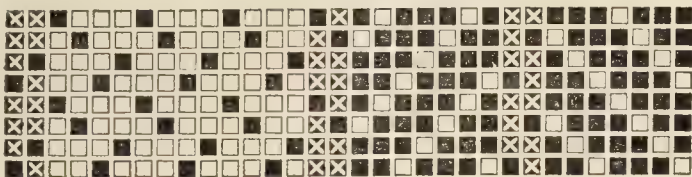
Design.

No. 75.



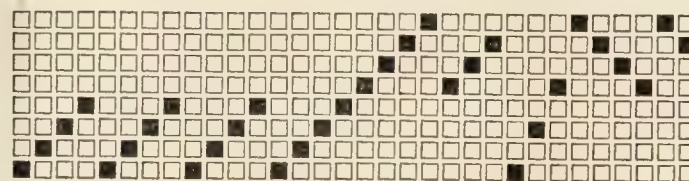
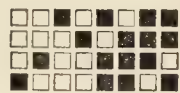
Design.

No. 76.



Design.

Pegging Plan.



Draft for No. 76.

Design No. 76 is a 32-end pattern, the warp being as follows:—

2 Red 12 Pale Blue
2 „ 7 White
2 „ 7 „

Design No. 73 is a 72-end pattern, the warp being as follows:—

17 White 7 Blue.
5 „ 1 Red.
5 „ 2 Blue.
7 „ 1 Red.
7 „ 2 Blue.
5 „ 1 Red.
5 „ 7 Blue.

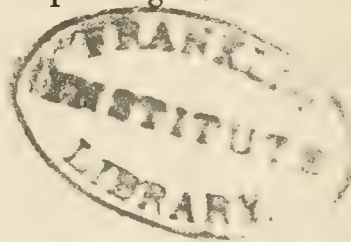
Design No. 74 is also a 72-end pattern, the warp being as follows:—

4 Blue and White } 2 Red.
Mottled
6 „ „ 3 „
3 „ „ 1 „
3 „ „ 3 „
6 „ „ 2 „
4 „ „ 4 „
8 White 4 „
3 „ 4 „
8 „ 4 „

Design No. 75 is a 48-end pattern, the warp being as follows:—

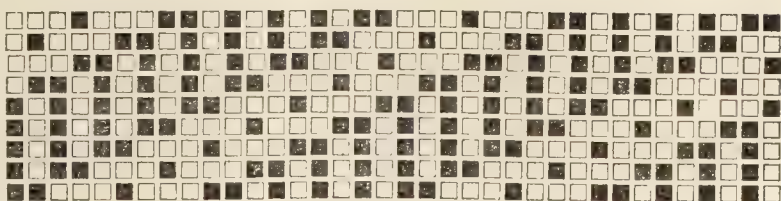
3 Red.
1 Blue } 11 times.
1 White
1 Blue.
3 Red.
2 Pale Blue.
15 White.
2 Pale Blue.

In cutting the cards for Nos. 73, 74, 75 and 76 cut all □ and ■



Worsted Coatings.

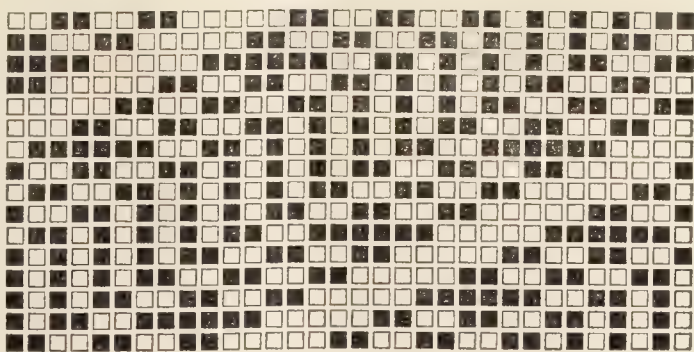
No. 77.



Design.

No. 77 is an 18-end pattern, and in design is for a Corkscrew effect.

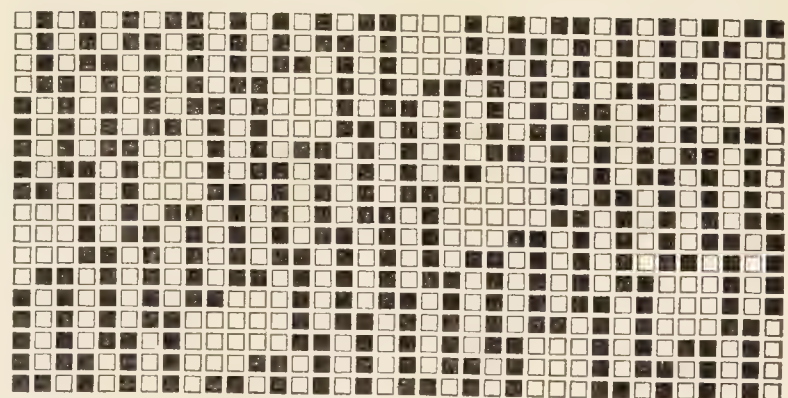
No. 78.



Design.

No. 78 is also for a Corkscrew effect, being a 32-end pattern.

No. 79.



Design.

No. 79 is a 36-end pattern, being in the Corkscrew style.

Nos. 78 and 79 will require the jacquard in weaving.

The ■ represents the weft. In cutting the cards cut all ■

Suitings for Spring, 1884.

No. 80.

Design.

2 threads Black and White twist.

2 " Black.

2 " Black and White twist.

2 " Light Blue.

2 " Black and White twist.

2 " Black.

2 " Black and White twist.

2 " Black.

2 " Black and White twist.

2 " Black.

2 " Black and White twist.

2 " Tan.

2 " Black and White twist.

2 " Black.

2 " Black and White twist.

2 " Black.

Twist.
 Solid Colours.

Draft.



Pegging Plan.

32 threads \times 29 = 928 threads in the warp.

Warp and Weft Yarns :

4 threads Black, 5888 twisted, 12 turns per inch = 1472 yds. per lb.

4 " Light Blue, 5888 twisted, " " = 1472 " "

4 " Tan, 5888 twisted, 12 turns " " = 1472 " "

2 " White, 5888 twisted, 7 turns per inch. } and then Black and White,
 2 " Black, 5888 twisted, 7 turns per inch. } twisted together, 5 turns per
 inch = 1472 yds. per lb.

Weft same as warp, the picking to correspond with the design of the warp.

Reed 14. 1 thread in a dent.

13 picks per inch.

66 $\frac{1}{2}$ inches wide in the loom.

56 inches wide when finished.

Clear finish.

No. 81.

Design.

2 threads Bronze Green.

4 " Black.

2 " Bronze Green.

4 " Black.

2 " Bronze Green.

4 " Black.

2 " Bronze Green.

4 " Black.

2 " Bronze Green.

4 " Black.

2 " Bronze Green.

10 " Dark Blue.

2 " Crimson and Gold twist.

10 " Dark Blue.

2 " Bronze Green.

4 " Black.

2 " Bronze Green.

4 " Black.

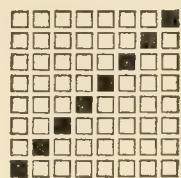
2 " Bronze Green.

4 " Black.

2 " Bronze Green.

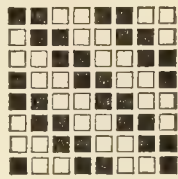
4 " Black.

4 " Black.



Draft.

All straight over.



Pegging Plan.

84 threads \times 44 = 3696 threads of warp.

Warp and Weft Yarns :

Bronze Green, single 5888 yards per lb.

Black " " "

Dark Blue " " "

1 Crimson 11776 yds. } twisted, 12 turns per inch = 5888

1 Gold 11776 yds. } yds. per lb.

Weft same as warp, the picking to correspond with the design of the warp.

Reed 14. 4 threads in a dent.

52 picks per inch.

66 inches wide in the loom.

56 inches wide when finished.

Clear finish.

No. 82.

Design.

20 threads Black.

4 " Bright Green.

12 " Olive.

4 " Black.

8 " Olive.

6 " Black.

6 " Olive.

8 " Black.

4 " Olive.

10 " Black.

2 " Olive.

40 " Black.

4 " Crimson and Black twist

12 " Brown.

4 " Black.

8 " Brown.

6 " Black.

6 " Brown.

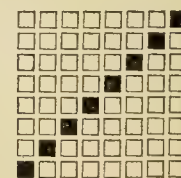
8 " Black.

4 " Brown.

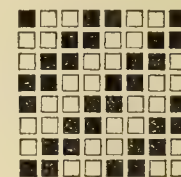
10 " Black.

2 " Brown.

20 " Black.



Draft.



Pegging Plan.

208 threads \times 18 = 3744 threads in the warp.

Warp and Weft Yarns :

Black, single, 5888 yards per lb.

Olive " 5888 " "

Brown " 5888 " "

Bright Green " 5888 " "

1 Crimson 11776 yds. } twisted, 12 turns per inch = 5888

1 Black 11776 yds. } yds. per lb.

Weft same as the warp, the picking to correspond with the design of the warp.

Reed 14. 4 threads in a dent.

52 picks per inch.

66 $\frac{1}{2}$ inches wide in the loom.

56 inches wide when finished.

Clear finish.

New Fabrics.

New materials are still making their appearance in Paris, and it is only quite recently that the best of the novelties in washing materials have been produced. These comprise, amongst others, some printed satinettes in Pekin stripes or with patterns similar to those on silks; birds' heads, bouquets of flowers, Chinese designs, &c. These satinettes are of beautiful quality. Printed figures are also coming into favour again. There are dresses also made of a kind of canvas woven fabric in different shades, and shot silks, such as were worn years ago, with jackets and habit bodices of velvet cloth in the same shade. There are beautiful dresses, too, of surah, voile, cashmere silk, Chinese lawn and Indian muslin. Light materials, such as zephyrs, cashmere taffetas, shot taffetas with small broche flowers, and Chinese pongees are likely to be much worn and also the new material made to imitate crepe de Chine and called Eolienne. Plaid voiles and zephyrs are in great request also. In Paris, costumes are rather dark in colour as the Parisienne objects to sudden changes. Hydrangea, canaque, crushed strawberry and peacock blue are the favourites, æsthetic colours being decidedly in the ascendant. The colours of the fabrics are lovely but the designs are not so pleasing. There are beautiful sprays and flowers, but some designs are eccentric and not picturesque, such, for instance, as horses', animals', or birds' heads, mushrooms, bee-hives, large oval spots, &c. Lace is used as a trimming on costumes intended for dressy occasions. Pure white and écreu embroideries are more general for the variety of plain washing goods.



MACHINERY, TOOLS, &c.

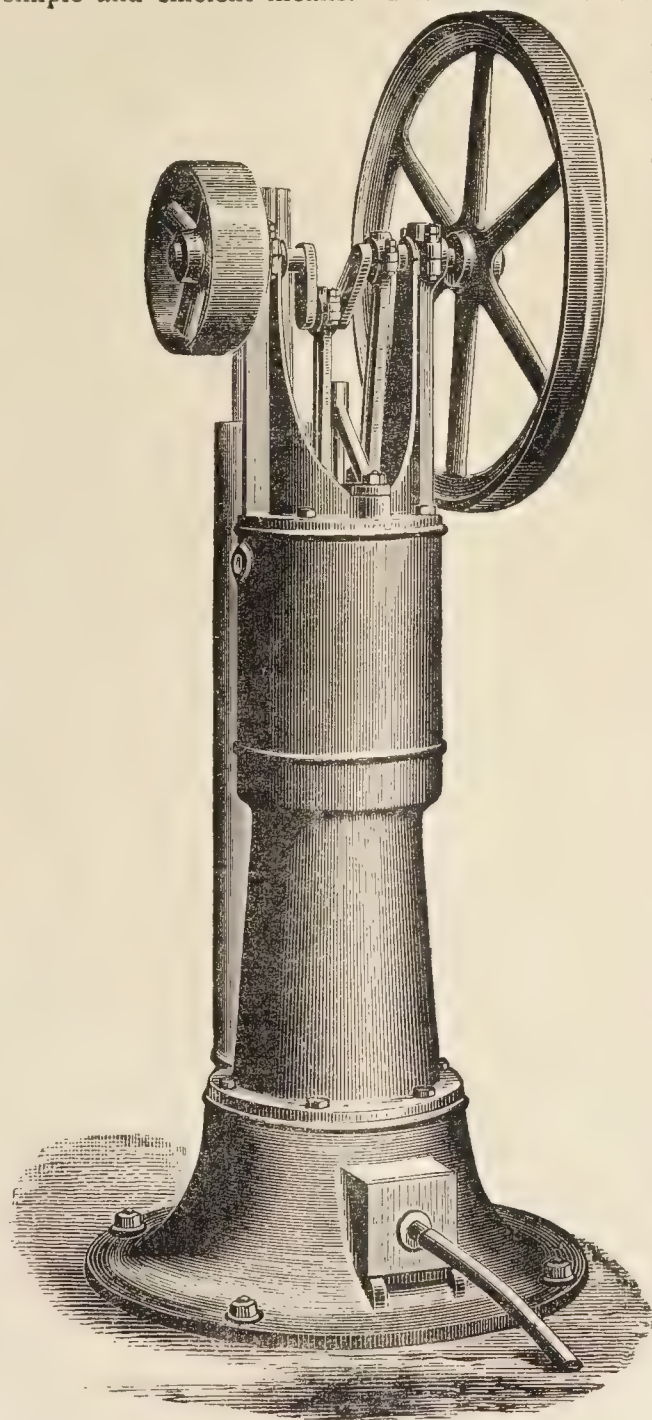


An Improved Appliance for Jacquard Looms.

The musketoon for Jacquard looms, invented by Mr. M. Vincenzi furnished with a double ring, is intended to enable the weaver to change a broken card without being obliged to remove from the musketoon the eyes of neck twines threaded therein. Furthermore, in small looms, big holes have to be contrived through the card board for the musketoon to pass through, and the size of these holes weakens the boards considerably, causing the hooks to pass across, particularly if they chance to be overloaded. This new arrangement of the musketoon enables the operator to reduce, in a notable manner, the diameter of the holes of the cord board, for through this contrivance only the cord passes and not through the musketoon. The distinctive characteristic of this contrivance is that there is a double branch, whether the notch of each ring be turned inward, or the two rods forming the ring be turned in the same direction as an ordinary notch.—*Moniteur des Fils et Tissus*.

A New Hot Air Engine.

A new type of hot air engine made its first appearance at the recent Manchester Electrical Exhibition. This engine, which we illustrate, is the patent of Messrs. A. E. and H. Robinson, of Manchester. The principle upon which the engine works is the alternate heating and cooling of a body of air, with the consequent expansion and contraction of the air utilised to obtain motive power; and this principle is carried out into useful effect by simple and efficient means. The connections between the pistons and the



crank shaft are direct, thus reducing noise when in operation, as well as the wear and tear, to a minimum; whilst the engine, working with a plain, double - crank action, has a smooth steady motion given to the parts. In the smaller sizes, such as those shown at the exhibition, a gas flame is used to give the necessary heat; the air, to supply the burner, being drawn down a space around the chimney, becomes highly heated before reaching the burner, and thus a considerable economy in the consumption of gas is effected. Coal or oil can, however, be used when gas is not obtainable. The object of the inventors has been to produce an engine simple in construction and certain in action; and in this, it may be said, they have been successful. It is certainly so constructed that it has been brought into a remarkably small compass, and one means to attain this is the introduction of a special lining to the heated chamber, which checks the radiation of heat, and allows this portion of the engine to be compressed into the smallest possible limits. Messrs. Robinson showed their new engines at work in various parts of the exhibition, satisfactory results being obtained in all cases.

A New Machine for Preparing the Ramie Fibre for Spinning.

The society for promoting the Ramie industry in France has approved of the decorticating machine of Messrs. Labarie and Berthet. By it the difficult problem of separating the ligneous matters from the fibre has been solved. The invention of a method of preparing the fibre for spinning remained, and this appears to have been made by M. Scheifner.

The fibre is placed upon a horizontal endless band, which carries it to a pair of fluted drums. These distribute it to a cylinder, which is covered with teeth, about 3 millimetres in diameter and 3 centimetres long. Then it passes another cylinder, having teeth, $1\frac{1}{2}$ millimetres in diameter and 20 millimetres long, and then to the third yet smaller. Between the cylinders and above them small rollers, covered with carding, direct and maintain the fibre. The motion of the cylinder increases in rapidity from the coarsest to the finest, in the proportion of 10, 20, and 40. Two fine roller cards deliver the fibre to a drum containing a system of jaws, operated by eccentrics and cams. An intermitting rotary movement is given to the drum, and when it stops, the pair of jaws opposite to the latter of the small cylinders seize and close on a portion of the fibre, which they submit to the action of a card drum, making 50 turns a minute. This mechanical combing is so repeated on a pair of adjoining and similar drums that the portions of the fibre which have been pinched by the jaws are now combed. The fibre is again carded and run off in a continuous band. To remove the mucilaginous and ligneous portions which still remain, the fibre is steamed with the vapour of water acidulated with hydrochloric acid. This operation is followed by a bath at a temperature varying from 80° C. to 120° C., containing from 5 to 10 per cent. of carbonate of soda made caustic by lime. Then follows the bleaching, which comprises four distinct operations.

1. Make a bath of four times the weight of the fibre, containing 10 per cent. chlorinated lime and 5 per cent. hydrochloric acid. Enter and steep for from fifteen to thirty minutes.

2. Make bath of eight times the weight of the fibre, containing 10 per cent. of Epsom salts; the chlorine remaining from the last bath will combine with a portion of the magnesia; this compound will assist in bleaching without acting injuriously on the fibre.

3. Make a bath containing 5 per cent. carbonate of soda, and enter fibre in order to convert the magnesian salt into the carbonate.

4. Neutralize any remaining chlorine by the action of sulphurous acid. After bleaching pass through bath of carbonate of soda, and then through bath of dilute hydrochloric acid, which serve to divide the fibres very finely, and give them the lustre of silk. Finally, to increase their flexibility and softness, make use of the following soaping:—

Soap 2 parts, carbonate of soda half part, water 100 parts, brought nearly to a boil. For the same purpose exposure to the vapours of glycerine is sometimes preferred.

Closer Inspection of Cotton.

For some time past there seems to have been a desire, amongst the actual workers in the different departments of the cotton manufacture, for a more intimate knowledge of the fibre. A foreign contemporary, writing on the subject, says experiments are being made by scientifically inclined workers in cotton, and the results which they are achieving are read with interest by an increasing number in the trade. Very few engaged in this industry know anything about the construction of the fibre. The manipulation of cotton can never be properly conducted until the fibre is thoroughly understood by means of the microscope. A recent work, published by an English cotton manufacturer, gives an abundance of interesting information; but, after all, there is so much left unsaid that the reader feels that he has opened the first page only of a most interesting volume. Guess-work prevails to a great extent in the purchasing and manipulation of cotton fibre. Exactness is almost unknown. It is not because a proper and intimate knowledge of it is impossible, but simply because the necessary efforts have not been made to acquire that knowledge. This fact is being daily more recognized. An exact knowledge of the fibre in the raw state would facilitate the operations of manufacture, and would enable the manufacturer to know in advance the quality of goods that would be produced. As it now is, there is a great deal of haphazard work, and material is made which is expected to be first class, but when completed, is found, for some not apparent reason, to be inferior, not in whole, but in parts. The time is not far distant when spinning and weaving will be revolutionized, so far as a knowledge of the material is concerned, and when the material will be used with as much exactness, as to the results desired, as is now the case in any other more developed branch of industry.

The Parcels Post.

The following preliminary notice has been issued from the Post Office :—The Postmaster-General hereby gives notice that, on Wednesday, the 1st of August, he will be prepared to accept, at any post-office in the United Kingdom, parcels intended for transmission by the inland parcels post under the following general conditions in regard to weights, dimensions, and the rates of postage, viz.:—Weights and postage. For an inland postal parcel of a weight not exceeding 1 lb., the rate of postage (to be prepaid in ordinary postage stamps) will be 3d.; exceeding 1 lb. and not exceeding 3 lb., 6d.; exceeding 3 lb. and not exceeding 5 lb., 9d.; exceeding 5 lb. and not exceeding 7 lb., 1s. Dimensions.—The dimensions allowed for an inland post parcel will be—*maximum* length, 3 ft. 6 in.; *maximum* length and girth combined, 6 ft. Examples—A parcel measuring 3 ft. 6 in. in its longest dimension may measure as much as 2 ft. 6 in. in girth—*i.e.*, around its thickest part; or a shorter parcel may be thicker—*e.g.*, if measuring no more than 3 ft. in length, it may measure as much as 3 ft. in girth—*i.e.*, around its thickest part.

Ornamentation.

Are we now trading in art? This question comes uppermost in our mind as we view the ornamental work of to-day, and particularly that of the painter. Here we see what is termed the "æsthetic style," which is of comparatively recent origin, many hints and directions being given in a work brought out by Mr. Chares E. Eastlake, entitled "Hints on Household Tastes." This *style* is not a classified "order," as that of sculpture or architecture; it has no definite principles of treatment and rules of application or delineation. It is so unrestrained in its requirements that the wildest conceits of the uneducated pretender may be imposed, and the most absurd and distorted features defended as "in keeping with the style." It may be advantageous to the artist to cater to the whims of the lah-de-dah aristocrat, and if need be, lower the scale of his profession to meet their requirements; but in doing so he is "cutting off his nose to spite his face." The school boy will often produce upon his slate a more meritorious design than many we see on what ought to be good work, and it should be the aim of the true ornamentor to discountenance this innovation upon his trade, as it takes from him the value of all his years of practice, and brings his handiwork down to a scale at par with the dauber. The true Roman scroll is becoming obsolete, owing to the introduction of these "Eastlake," "Japanese," "Æsthetic" and "Queen Anne" "styles;" and who is there among *real artists* who will deny the fact that skill and long practice must be brought into play to produce such work as that which once gave beauty to our walls and ceilings? The graceful "sweeps" intertwining stems and leaves, the harmonious colouring, could not be produced by the amateur, nor by any one who had not studied long and well to master the art.—*Exchange*.

Uneven Dyeing with Methyl Violet.

The complaints of uneven dyeing with methyl violet, which are sometimes made, are due in the majority of cases to imperfect solution. A good methyl violet ought never to be soaked at a boil, and to effect its solution ought never to be thrown into boiling water. It requires a reasonable and quiet treatment—a matter which to many dyers appears impossible, for want of time they say. This defect in treatment revenges itself on the purse in a painful manner. For methyl violet there is only one way of proceeding practically and economically. The violet, in fragments, is put in the vessel in which the solution is to be effected and *slowly* watered with boiling water in the proportion of about 1 part to 20. At first the violet forms a thick and tenacious paste, which is reduced by the addition of water and stirring. This dissolving should be performed in the water bath to avoid a too rapid cooling after solution. When perfectly dissolved and completely cool, the liquid is filtered, and there will then be no danger of the goods becoming spotty and uneven.—*Teinturier Pratique*.

ODDS AND ENDS.

Arrangements are being made for holding a county fine art exhibition in Canterbury during July.

A national exhibition of art, science and industry, is proposed to be held at Southport in the course of the ensuing year.

The National Cotton Exposition has been organised at New Orleans, with a capital of \$500,000, and Edward Richardson, the well-known cotton planter and commission merchant, of New Orleans, is president.

A Norwegian exhibition of art and industry is to be opened in Christiana on the 16th of June by the Crown Prince, who is the honorary president. An elegant edifice has been built for the purpose near the University, facing the Royal Palace, and it is expected the exhibition will be on a very extensive scale.

The *Dry Goods Bulletin*, says the New York cotton brokers, complain bitterly that the once large business in spinners' orders is fast leaving their market. The manufacturers now buy almost entirely direct from the various southern markets, from which they get firm offers on the various grades, for cotton laid down at the mill and at prices generally lower than can be done in New York or Boston.

The South Kensington Museum has recently acquired a group of three large tapestries representing Petriarch's "Triumphs"—the triumph of Fame, of Chastity, and of Death—which were made from the designs of some Flemish artist, A.D. 1507. Each of these three tapestries measure about 30 feet by 14, are full of life-sized figures, and are either marvellously well preserved, or have been most successfully restored. They were lately seen by one of the high officials of the Museum in the exhibition of the Union Central des Arts Decoratifs, who secured them from a Paris dealer for £2,800.

A new joint stock company, under the title of the "Baumwoll Compagnie," has been formed at Stuttgart for the establishment of a trade in raw cotton and all materials required in the cotton industry. The company is being formed by a combination consisting of the Royal Wurtemberg Court Bank and the Berlin Trading Society, and with them is incorporated the cotton commission business of C. E. Staenglen of Stuttgart. The capital of the company is fixed at 6,000,000 marks; it is not intended that any shares shall be issued to the public until the undertaking has been tested by a year's working.

Amongst the numerous interesting features of the approaching electrical exhibition at Vienna will be a series of practical tests as to the effect of the electric light on the richer class of textile materials and on embroideries. The necessary specimens of these articles are lent by the Emperor, and will be arranged in a suitable pavilion. Its dimensions will be sufficiently large to allow of the tests being of practical value, and it is said that more than one method of electric lighting will be tried, so that a comparison may be instituted as to the relative effects produced by various systems of illuminations.

A cement boiler for dyeing purposes has been invented by Mr. Lavenant in view of the fact that metallic boilers when used for dyeing cotton aniline black, deteriorate rapidly, so that, at the end of six or seven months' use new ones have to be ordered. Now it so chances that Portland and similar cements resist well the action of hydrochloric and sulphuric acids, as well as of chromate potassa and aniline jointly. Mr. Lavenant has, therefore, built within brick walls boilers for such species of dyeing, and these recipients last a long time. Should there be any wear on the surface of the cement, repair is extremely easy and quite inexpensive.

The French syndicate of silk dealers estimates last year's total yield of the silk crops at 9,787,000 kilos. This total has only been exceeded in 1874 and 1880, the results of the crops in the other years of the last decade having been as follow :—

	Kilos.		Kilos.
1882	9,787,000	1877	8,390,000
1881	9,495,000	1876	8,023,000
1880	10,577,000	1875	9,671,000
1879	8,172,000	1874	10,074,000
1878	9,098,000	1873	8,603,000

A so-called "electric flannel" has been invented in France, by Dr. Claudat, who affirms that it is efficacious against rheumatism. This flannel contains, per kilogramme of wool, 115 grammes of oxides of tin, copper, zinc, and iron. A series of threads of the tissues, saturated with these metallic products, are woven alternately with the ordinary threads. The flannel so prepared forms a dry pile. M. Drincourt, professor of physics at the Rheims Lyceum, and M. Portevin, of the Polytechnic School, have proved, independently, by very precise experiments, that Dr. Claudat's flannel liberates electricity, either by simple contact, or (better) in contact with the products of transpiration when the tissue is applied to the body.

NOTICE TO ADVERTISERS.

Advertisements will be inserted at the following rates; (in all cases prepaid): *Twenty words, One Shilling; Sixpence* for each additional *Twelve words* or part of *Twelve*. The address being counted as part of the Advertisement.

Displayed Advertisements according to arrangement.

Agency.

A GENTLEMEN well connected with large Carpet Manufacturers in Kidderminster desires an Agency to represent good firms for the Sale of Goods used in the Manufacture of Carpets and Rugs. Has very large warehouse room. Apply X, *Journal of Fabrics and Textile Industries* Office, 3, Gerrard Street, Halifax.

Wanted.

SITUATION desired by advertiser as SECRETARY, ASSISTANT-MANAGER, or other position of trust. Good correspondent in French and German, and accustomed to travel. Twelve years' engineering experience, and competent inspector of machinery. Well known over the north of England. Address L. R., care of John Dale and Co., 17, Bridge Street, Bradford.

TO WOOLLEN MANUFACTURERS.—A London Agent, having a good connection and first-class financial support, also a large Warehouse in the City, is open to receive Stock and Sell in his own name or that of manufacturers. Highest references. Address W. Thomas, London Institution, Finsbury Circus, London.

Partnership.

PARTNERSHIP.—Wanted, for a first-class Woollen Manufacturing Concern in Ireland, a PARTNER, either active or otherwise, having about £5,000 at his disposal, to take the place of one retiring. Apply to Craig, Gardner, and Co., Trinity Chambers, Dublin.

To be Let or Sold.

TO be LET the BOBBIN MILL, situated near Wray, Lancaster, on the bank of the river Hindburn, together with the weir, pen-trough, sluice, water-wheel, and gearing thereto; and a good house and outbuildings. Apply J. Jowitt, Estate Office, Hornby Castle.

TO COMMISSION COMBERS and YARN SPINNERS. To be Sold by Private, a compact PLANT of BOTANY CARDING and SPINNING MACHINERY, consisting of three 54in. carding engines, each containing four lickens-in, two cylinders, two doffers, three workers, four strippers, and fancy over each cylinder; one 4-cylinder backwashing machine, with gill box attached; two finishing gill boxes, grinding frame and emery rollers, one patent double-head combing machine, drawing cans, &c. All the above new within twelve months, and by best makers. Apply to Mr. Randall Thornton, Cleckheaton; or to view, to the Engineer, Marshall's Mill, Manchester Road, Bradford.

THE GAZETTE.

Adjudication of Bankruptcy.

Walliss H., Mansfield, Notts, cotton doubler.

Liquidations by Arrangement or Composition.

Broadbent T., Holbeck, near Leeds, woollen manufacturer.
Atkinson W. H., Wellington Road, Leeds, shoddy and mungo dealer.
Barracough J., Luck Lane, Huddersfield, waste opener.
Thorpe Francis and Co., Hartwith-cum-Winsley, near Pateley Bridge, Yorkshire, flax spinners and linen thread manufacturers.
Haynes W., W. J. Haynes, and C. H. Haynes, Pendleton, fellmongers.
Exley R., Heaton, near Bradford, worsted spinner.
Hall L., Argyle Street, Keighley, and A. Ovenden, Leeds Street, Keighley, worsted machine makers.
Dugdale W., Burnley, cotton manufacturer.
Kelly Patrick, Shipley, commission wool comber.
Brooke Benjamin, Eastfield Mills, Dewsbury, dyer.
Heggs John, Rutland Street, Leicester, yarn agent.
Heaton Edmund, Chadderton, cotton waste bleacher.
Fowler James and John Fowler, Macclesfield, silk manufacturers.
C. White, formerly Charlesworth, cotton spinner, now Chorlton-on-Medlock, manager.
W. Rhodes, Huddersfield, yarn spinner.
J. Crossland and T. Crossland, Huddersfield, woollen spinners.
H. C. Sykes, Neville Street, Leeds, indigo and logwood merchant.
L. Horsfall, Todmorden, cotton manufacturer.
A. Musgrave, Kirkstall Road, Leeds, dyer.

William Dugdale, Ashfield Mill, Calder Vale, Burnley, cotton manufacturer.
Frederick Rushworth, Hartshead, Halifax, cloth finisher.
Charles Brooke, Carlton Road, Dewsbury, dyer.
James Bingley, Leeds, cloth manufacturer, trading as James Bingley and Co.
Robert Edward Kelly and David Rayner, Bristol, lace merchants.

Dividends.

Orrah A., Bay Hall Terrace, Birkby, Huddersfield, woollen cord manufacturers; a first and final dividend of 8s. in the pound, at the offices of G. G. Poppleton, trustee, 6, King Street, Huddersfield.
Blake J., R. L. Cook, and A. T. Cook, 1A, Wharf Street, Leicester, hosiery manufacturers; a first and final dividend of 6s. 5d. in the pound, at the offices of W. H. Chamberlain and E. C. Russell, trustees, 4, New Street, Leicester.
Sharp M., and J. Sharnock, Victoria Mills, Bowling, Bradford, worsted spinners and manufacturers; first dividend of 3s. 4d. in the pound, at the offices of Messrs. B. and E. Musgrave, Victoria Chambers, Bank Street.

Dissolutions of Partnership.

Suthers and Saville, Oldham, cotton spinners.
Pickering and Clegg, Manchester, grey cloth agents.
Holland and Dobell, frilling manufacturers, Watling Street, London.
Bennett, Herman and Varley, bleachers, Great Lever Bleach and Chemical Works, near Bolton, under the style or firm of John Smith, junr., and Co.; so far as regards Reginald Varley.
Fawcett Richard, John, Edward and Charles, wool merchants and commission agents, Bradford, on the retirement of Richard Fawcett.
Hollins and Nelson, hosiery manufacturers, Nottingham.
Cook James Greenwood, cotton doublers, Huddersfield; by the retirement of James Greenwood and Isaac Schofield Greenwood.
Steele R., and F. W. Cooper, Castle Gate, Nottingham, hosiery manufacturers.
Heywood S., and S. Wrigley, Croft Mill, Ashton-under-Lyne, cotton spinners and manufacturers.
Booth J. and Co., Linthwaite, flock and waste dealers.
Cropper William and Brothers, New Church, cotton waste dealers.
Ashby W. and Co., lace manufacturers, Nottingham; as regards G. W. Truman.
Truman J. and G. lace manufacturers, Nottingham.
Ward E. W., and George Ward and Co., spindle manufacturers, Dronfield.
Wilson James and Sons, Farnworth and Manchester, cotton manufacturers; as regards J. Wilson.
Gardiner James and Co., Huddersfield, mungo merchants.
Riley W. H., J. E. Riley, and J. Rogers, Heywood, Lancashire, manufacturers.
Roberts, Ogden, and Sons, Bradford, woolstaplers; as regards F. Ogden.
Beverley and Pearson, Calverley, woollen manufacturers.
Hall and Lewin, Leicester spinners.
J. Hellawell and Co., Huddersfield, mungo merchants.
Stott Brothers, Brighouse, cotton spinners.
Wylde, Hustler, and Blaxland, Leeds, woollen manufacturers.

Bills of Sale.

	£	s.	d.
Radford T., Long Eaton, lace manufacturer	175	15	11 &c.
Wake H. C., Parkfield Street, Moss Side, near Manchester, calico printer			Assignment to wife.
Watson John, Marles Street, Burnley, cotton manufacturers	1,500	0	0
Eames E. J., Wellington Street, Luton, draper	300	0	0
Spence H. (and wife), Sydenham Place, Bradford, wool buyer	52	10	0
Budding T., Pontyminster, Monmouth, woollen manufacturer	450	0	0
Cannon C., 67, Davies Street, Oxford Street, dyer	262	12	5
Walker, S., 703, Rochdale Road, Manchester, draper	58	17	6

PATENTS.

Specially compiled for "THE JOURNAL OF FABRICS AND TEXTILE INDUSTRIES" by G. G. M. HARDINGHAM, C.E., Fellow of the Institute of Patent Agents, 191, Fleet Street, London, E.C.

Applications for Letters Patent.

	No.
Balling heads of gill boxes. P. Smith, S. Ambler, and J. Hund, Keighley	22nd May 2564
Carpets. J. W. Walker, Kidderminster	28th April 2150
Carpets. E. Crossley and R. Cochrane, Halifax	2nd May 2226
Cutting pile fabrics. R. Hitchcock, New York	8th May 2342
Carding engines. G. and E. Ashworth, Manchester	15th May 2432
Carding engines. W. Tatham, Rochdale	16th May 2450
Cleaning cotton, &c. J. Imray (H. Kocchlin, Paris)	28th May 2641
Disinfecting rags, &c. J. Illingworth, Batley	12th May 2415
Doubling, &c., apparatus. W. H. Jones, Middleton	25th May 2604
Drying wool, &c. J. Illingworth, Batley	28th May 2649
Finishing machines. W. P. Thompson (D. C. Sumner, Worcester, Mass., U.S.A.)	27th April 2144

Fulling machines. P. Legrand, Paris	30th April 2173
Feeding apparatus for carding engines. E. Edwards (A. Cremer, Perney et Cie, Belgium)	22nd May 2565
Jacquard apparatus. W. Davenport and W. Crossley, Failsworth	18th May 2484
Indigo, treatment of for use in dyeing. W. Brookes (T. Holliday, Huddersfield)	18th May 2486
Knitting machines. S. Lowe and J. Lamb, Notts.	10th May 2383
Lace and embroidery. H. Pataley (M. Heimann, Berlin)	27th April 2135
Lace blinds or hollands. W. Dow and T. Frame, Glasgow	11th May 2403
Lace machinery. F. E. A. Büsche, Westphalia	15th May 2441
Ladies' necklets and similar fabrics. J. Mason and T. H. Hambleton, Macclesfield	25th May 2603
Looms. J. Langton and J. Gregson, Preston	28th May 2157
Looms. F. Leeming and R. Wilkinson, Bradford	2nd May 2233
Looms. G. H. Hodgson, Bradford	10th May 2379
Looms. A. J. Boulton (M. Baltus, Rouen, France)	16th May 2457
Looms. W. Tristram and W. Westhead, Bolton	18th May 2490
Looms. S. C. Lister and J. Reiscach, Bradford	26th May 2629
Pickers. R. Lister, Keighley	12th May 2426
Rollers of spinning machines. W. R. Lake (E. Mehl, Augsburg, Germany)	28th April 2168
Red dye stuffs. S. Pitt (Verein Chemischer Fabriken, Mannheim, Germany)	2nd May 2237
Spinning machinery. B. A. Dobson and W. H. Singleton, Bolton	2nd May 2232
Spindles of spinning frames. D. Skerch, Ayr	8th May 2319
Self-acting readers for jacquard looms. R. W. Sutcliffe, London	9th May 2356
Spinning spindles. A. M. Clark (A. R. Sherman, Pawtucket, Province, U.S.A.)	19th May 2510
Spinning and doubling machines. G. A. Helliwell and J. H. Waller, Todmorton	22nd May 2554
Spinning mules. J. Newton and J. Leech, Oldham	25th May 2607
Stretching and drying machines. H. B. Barlow (C. Welter, Mulborne, Alsace)	26th May 2632
Textile fabrics. W. R. Lake (L. Chaux, Paris)	18th May 2496
Warping machines. W. R. Lake (R. L. Carr, Fall River, Mass., U.S.A.)	1st May 2218
Weaving carpets, &c. E. Crossley and R. Cochrane, Halifax	2nd May 2225
Weighing, &c., yarns or threads. T. Knowles, Bolton	3rd May 2254
Weaving designs. W. C. Kipling, London	9th May 2367
Wool washing apparatus. J. Imray (La Société Boca, Paris)	17th May 2468
Winding machines. J. Boyd, Shettleston, Lanak	26th May 2619

Grants of Provisional Protection for Six Months.

1540	1768	1806	1828	1831	1852	1866	1867
1904	1905	1915	1919	1931	1946	1947	1958
1970	1978	1996	1999	2004	2014	2059	2088
2096	2098	2107	2109	2144	2150	2151	2168
2181	(All of 1883.)						

Notices to Proceed.

(Notice of opposition to the Sealing of a Patent must be given within Twenty-one days of the Notice to Proceed being advertised in the Commissioners of Patents' Journal.)

Breaking, scutching and combing machines. B. J. B. Mills (N. de. Landtsheer, Paris)	16th Feb. 869
Combing machines. J. C. Walker, Shipley	10th April 1806
Collars for spinning. W. Jackson, Hull	16th April 1915
Carpets, &c. H. Fawcett, Kidderminster	24th April 2088
Doubling and twisting machines. P. Smith Jun., and S. Ambler, Keighley	12th Jan. 192
Dressing machines. W. R. Lake (M. Luthringer, Lyons)	14th Feb. 820
Dabbing brushes. H. Portway, Bradford, and C. Walker, Shipley	6th April 1740
Drying woven fabrics. A. Annandale, Dunbar	7th April 1751
Felt fabrics. A. J. Boulton (T. Jegler and J. Ofermann, Munich)	28th Dec. 6203
Guiding, &c., fibres. J. Kerr, Lancaster	12th April 1867
Knitting machines. W. M. Brown, Martini, Chemnitz	11th Jan. 175
Knitting machines. B. B. Barlow (O. Cazeneuve, Moutrejeau)	14th Feb. 533
Looms. T. Hardcastle, Kidderminster	3rd Jan. 43
Netting machinery. J. H. Johnson (Galland and Chaurmiere, Paris)	19th Jan. 327
Plush fabrics. J. H. Cunliffe, Rochdale	11th April 1831
Pile fabrics. W. R. Lake (C. Coupland, Seymour, Conn., U.S.A.)	17th April 1945

Ring spinning frames. J. and W. Monks and W. J. Redman, Bacup	22nd Mar. 1500
Spinning and winding machinery. F. Jenken, Edinburgh	2nd Jan. 26
Spinning machinery. N. Macbeth and R. Cottrill, Bolton	30th Dec. 6223
Spinning and twisting frames. A. Frier, Dundee	30th Dec. 6224
Treatment of textile vegetable fibres. J. Imray (E. Fremy and V. Urbain, Paris)	12th Feb. 763
Stentering and finishing machines. J. Smith, Renfrew	20th April 2004

Patents Sealed.

5291	5319	5354	5365	5413	5433	5478	5487
5578	5603	5608	5630	5653	5674	5914	6039
6095	6125	(All of 1882)					
44	235	346	761	806	986	1047	
(All of 1883)							

Patents on which the Stamp Duty of £50 has been paid.

Herbert J. Haddan, London, "Improvements in looms for weaving" A communication	20th May, 1880 2052
James C. Fell, Ashton-under-Lyne, "Improvements in machinery or apparatus for spinning and doubling cotton and other fibrous materials"	20th May, 1880 2047
Charles H. Nevill, Manchester, "Improvements in the construction of machinery or apparatus employed in printing calico and other textile fabrics"	4th May, 1880 1817
James Nuttall, Bury, "Improvements in machinery for cutting cards"	4th May, 1880 1822
William Milward and Benjamin Richards, both of Nottingham, "Improvements in apparatus for cleaning carpets and such like fabrics"	25th May, 1880 2120
George Ashworth and Elijah Ashworth, both of Manchester, "Improvements in wire cards"	14th May, 1880 1986
William Cheetham, Salford, "Improvements in self-acting temples for looms"	8th Aug. 1879 3187
William Morgan Brown, London, "Improvements in looms for weaving" A communication	29th May, 1880 2195

Patents on which the Stamp Duty of £100 has been paid

John Chisholm and John Clegg, both of Oldham, "Certain improvements in self-acting mules for spinning and doubling."	2nd May, 1876 1844
Alfred Vincent Newton, London, "Improvements in machinery for spreading, &c., hemp and other fibrous materials." A communication.	30th May, 1876 2276
John Henry Johnson, London, "Improvements in machinery or apparatus for combing wool and other fibrous materials. A communication."	2nd June, 1876 2322

Copyright of Designs.

(Registered during May, 1883.)

Class VI., Carpets.

397,863	William Green and Son, Kidderminster.
398,156	The Heckmondwike Manufacturing Company, Limited, Yorkshire.
398,213	Shepherd and Beveridge, Kirkcaldy.
398,333-35	E. Clarke and Sons, London.
398,352	Coates, Puller and Co., Perth.

Class XI., Furnitures.

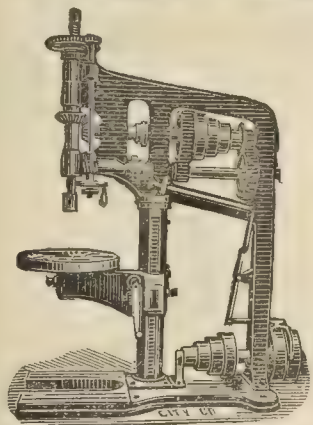
397,460-61	S. and F. Sternberg, Manchester.
397,508	D. Lee and Co., Manchester.
398,612-15	R. Dalglish, Falconer and Co., Manchester.
397,688	Thomas Hoyle and Sons, Manchester.
397,880	Boden, Terras and Co., Manchester.
397,881	D. Lee and Co., Manchester.
398,040	R. Dalglish, Falconer and Co., Manchester.
398,067	Thomas Hoyle and Sons, Manchester.
398,154	Morris and Co., London.
398,208	Thomas Hoyle and Sons, Manchester.
398,209-10	S. and F. Sternberg, Manchester.
398,275-79	C. H. Traub and Co., Manchester.
398,440	Beith Stevenson and Co., Manchester.
398,474	Edmund Potter and Co., Manchester.

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Wool, Burr Locks and Woollen Waste Carbonized and Cleansed from Burrs, Seeds, Shives, Cotton, Hemp, and all descriptions of Vegetable Matter, by their Patent Process, whereby the material is not injured in the Fibre, or affected in its power of taking Dyes of any shade.

CLOTH IN THE PIECE EXTRACTED AND CLEANSSED FROM BURLS WITH THE GREATEST CARE, AND WITHOUT EFFECTING THE SOUNDNESS OF THE CLOTH.

H. & R. T. LORD, 3, GERRARD STREET, HALIFAX, ARE PREPARED TO RECEIVE ORDERS FOR ALL KINDS OF MERCANTILE STATIONERY, HIGH CLASS LITHOGRAPHING, ENGRAVING & GENERAL PRINTING.



ALFRED YATES, BLACKWALL WORKS, HALIFAX, ENGLAND, SOLE MAKER OF PRATT'S PATENT VELOMOTOR,

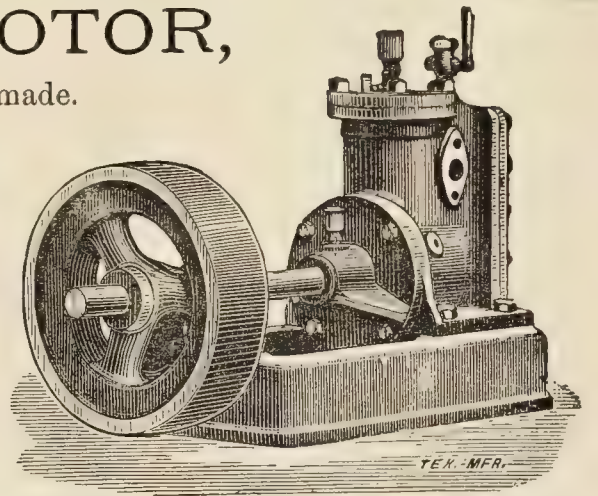
The Simplest, Cheapest, and most Economical Steam Engine made.
POWERFUL DOUBLE GEARED DRILLING MACHINES.

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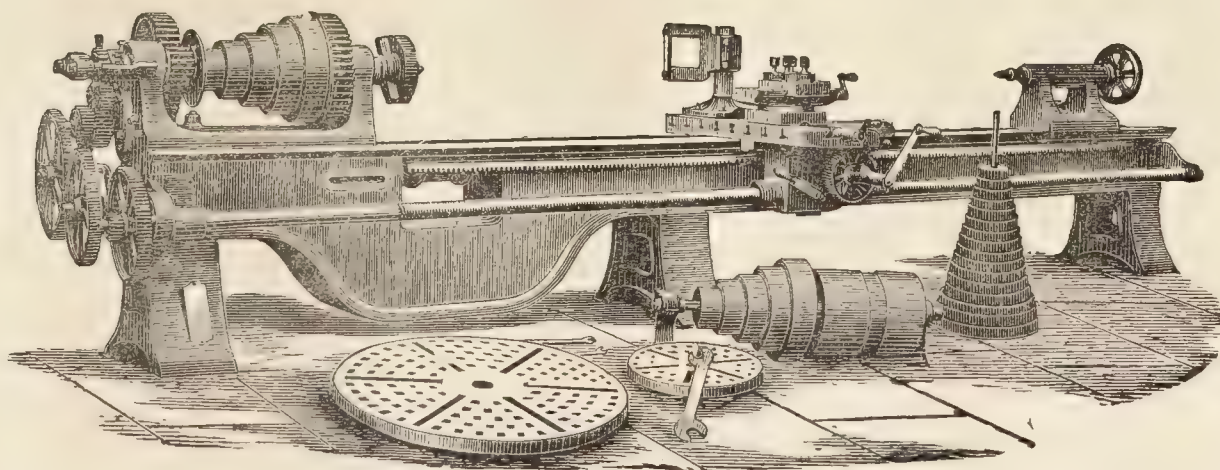


SCOTT BROTHERS,

West Mount Iron Works,
HALIFAX.



SCOTT
BROTHERS



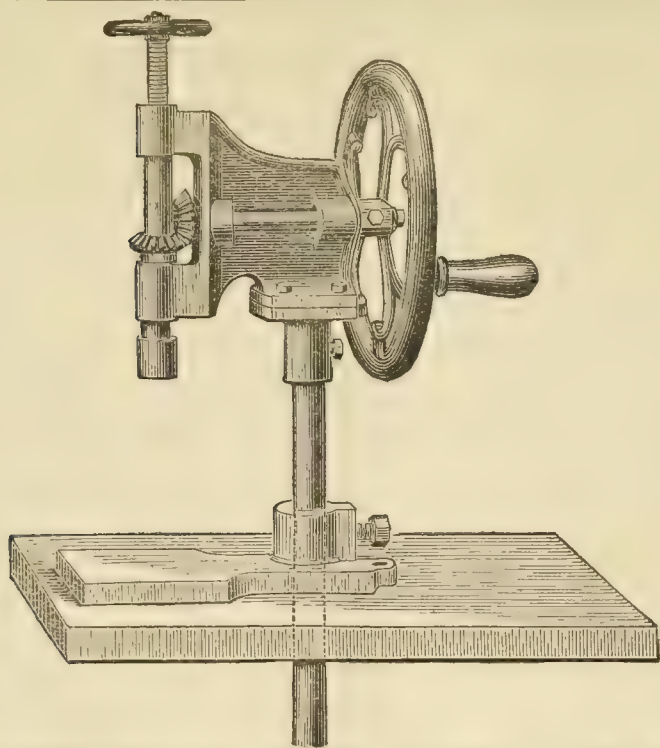
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BROTHERS

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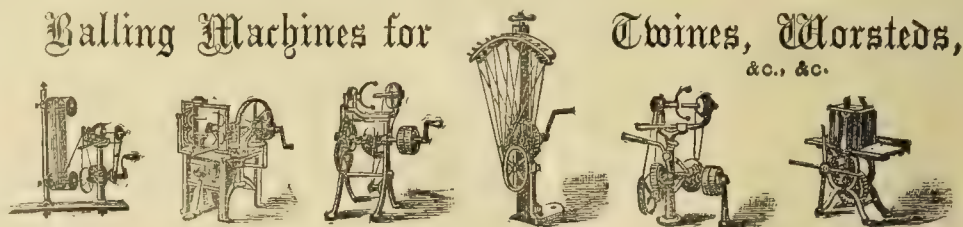


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HAND POWER DRILLING MACHINE
PRICE, £4 5.

The engraving represents a light, simple, and effective Drilling Machine, specially designed for Mill Owners, Colliery Proprietors, Ironmongers, Coach Builders, Joiners, Blacksmiths, Wheelwrights, Plumbers, Gas Fitters, &c., &c. It is so arranged that the head will swivel round to any position. Will drill holes from the solid 1 in. diameter; Traverse of Spindle 3 in.; Distance from Pillar to centre of Spindle 5½ in.; Distance from top of Table to Spindle end, when raised to highest point 20 ins.; Weight 84 lbs.

Balling Machines for

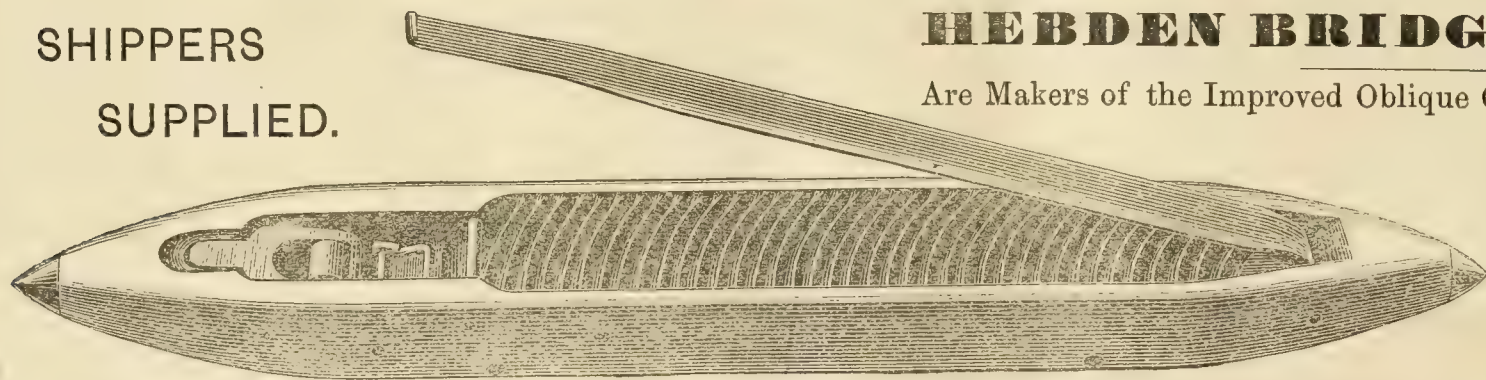


Twines, Worstedes,
&c., &c.

Paint or Colour Grinding Mills.



HANDEL HALSTEAD & SONS,
MANUFACTURERS OF ALL KINDS OF POWER LOOM SHUTTLES,
SHIPPERS
SUPPLIED.



Are Makers of the Improved Oblique Grooved Cop Shuttles, and Inventors of the Heel Spring under Shuttle Cover, for holding the Cop firmly down until woven out entirely to the end and thus WASTE PREVENTED.

These Shuttles are made chiefly for Carpet, Jute and Linen Manufacturers.

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IMPORTERS & EXPORTERS OF ALL DESCRIPTIONS OF PACKING MATERIALS.
— CANVAS, PAPER, MATS, —
OIL CLOTHS, TILLOTS, TAPES, ROPE & TWINE, &c., &c.
SAMPLES ON APPLICATION.

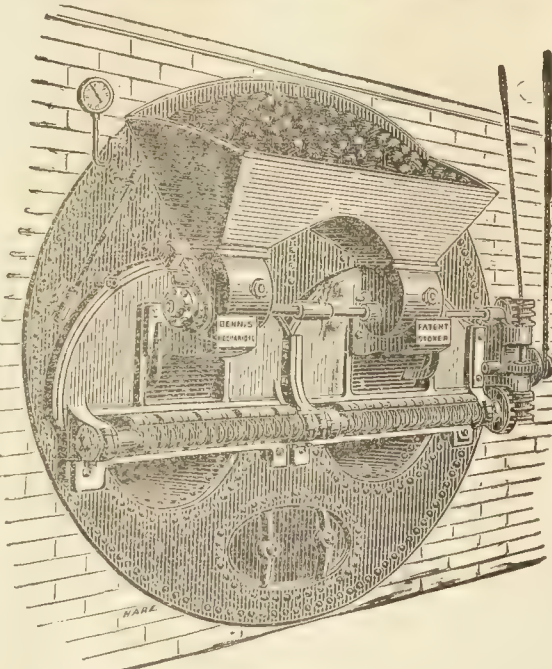
THE BEST & CHEAPEST MECHANICAL STOKER MADE

BENNIS'S PATENT.

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SMOKE ABATEMENT EXHIBITION.

HAS NO EQUAL
FOR EFFICIENCY, RELIABILITY,
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Fixed in a Few Hours. No Repairs.



MORE STEAM GUARANTEED from the same Fuel than by the BEST HAND-FIRING or ANY OTHER STOKER, more regular driving and no Smoke. With good draught two Boilers will do the work of three hand-fired—great economy.

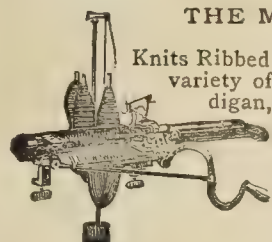
SUTCLIFFE BROTHERS, Stanley Works, GODLEY, near MANCHESTER.

Established 1796. **JOHN INGHAM & SONS,** Established 1796.
SHUTTLE, TACKLING, SIZING, BUFFALO AND LEATHER PICKER MAKERS,
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THE MOST IMPROVED.



Knits Ribbed or Plain, any size. Knits every variety of Jackets, Petticoats, &c., Cardigan, Fancy, or Plain, exactly same as hand.

This Knitter obtained the First Prize, over others, in competition at the Woollen Exhibition, Crystal Palace, London, 1881. 22 New Improvements. List 1d. Stamp.

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ENGINEERS' FITTINGS, &c.,
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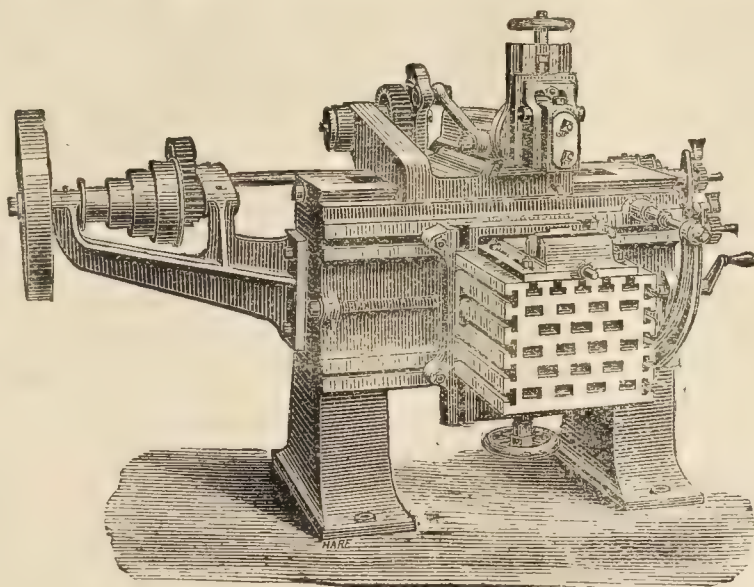
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 Thirty years' practical experience.

Provisional Protection, £8.

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 Looms are always in Stock.

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 NEW STREET, OLD POST OFFICE,
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India Rubber Valves, Sheets
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DOUBLE LEATHER BELTING FOR MAIN DRIVING BELTS,

Manufactured from the Best English Leather, any width, length, or strength required, without crossjoints, and of even thickness throughout.

Particular attention is drawn to **HALLAS and FIRTH'S PATENT PICKER.** This Picker has the advantage of having **DOUBLE THE SURFACE** of any Picker yet made, thus allowing it to check the Shuttle better, and preventing the drawing of the Staples and throwing of the Shuttle. Although more Rubber is used to stuff it, it has been found to save more than 200 PER CENT. of rubber used by the old Picker. It is impossible for it to be knocked to pieces by the Shuttle, consequently it must last much longer, and thereby effect a saving both of Shuttles and Pickers. Many of the best Firms in the district have taken the old ones off and replaced them with this Patent Picker.

A. FLATHER,
Jacquard Machine Maker,
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BRADFORD.

IMPROVED STAMPING MACHINES. REPEATERS.

Index Machines, Dressing Gear & Yarn Reels.

MAKER OF DOUBLE LIFTS IN ALL SIZES.

ESTABLISHED 1846.

THOMAS H. OLDFIELD & SON,
BOILER & PIPE COVERERS,
 WITH
NON-CONDUCTING CEMENT & HAIR FELT,

WHICH EFFECTS A SAVING OF 25 PER CENT. IN FUEL.

Also Manufacturers of **STEAM ENGINE PACKING,** and
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Address:—**OVENDEN, HALIFAX.**

COMPOSITION, HAIR & ROOFING FELT KEPT IN STOCK.

PROCTOR'S NEW PATENT MECHANICAL STOKER AND MOVEABLE FIRE BARS.

*Awarded Prize Medal
at the Smoke Abatement
Exhibition, South Ken-
sington, London, 1882.*

This Machine evaporates 9.4 lbs. of water per lb. of coal—water at 110°—with a very common slack, from Hindley Field Coal Co., Wigan, the price being 3/3 per ton at the Colliery.

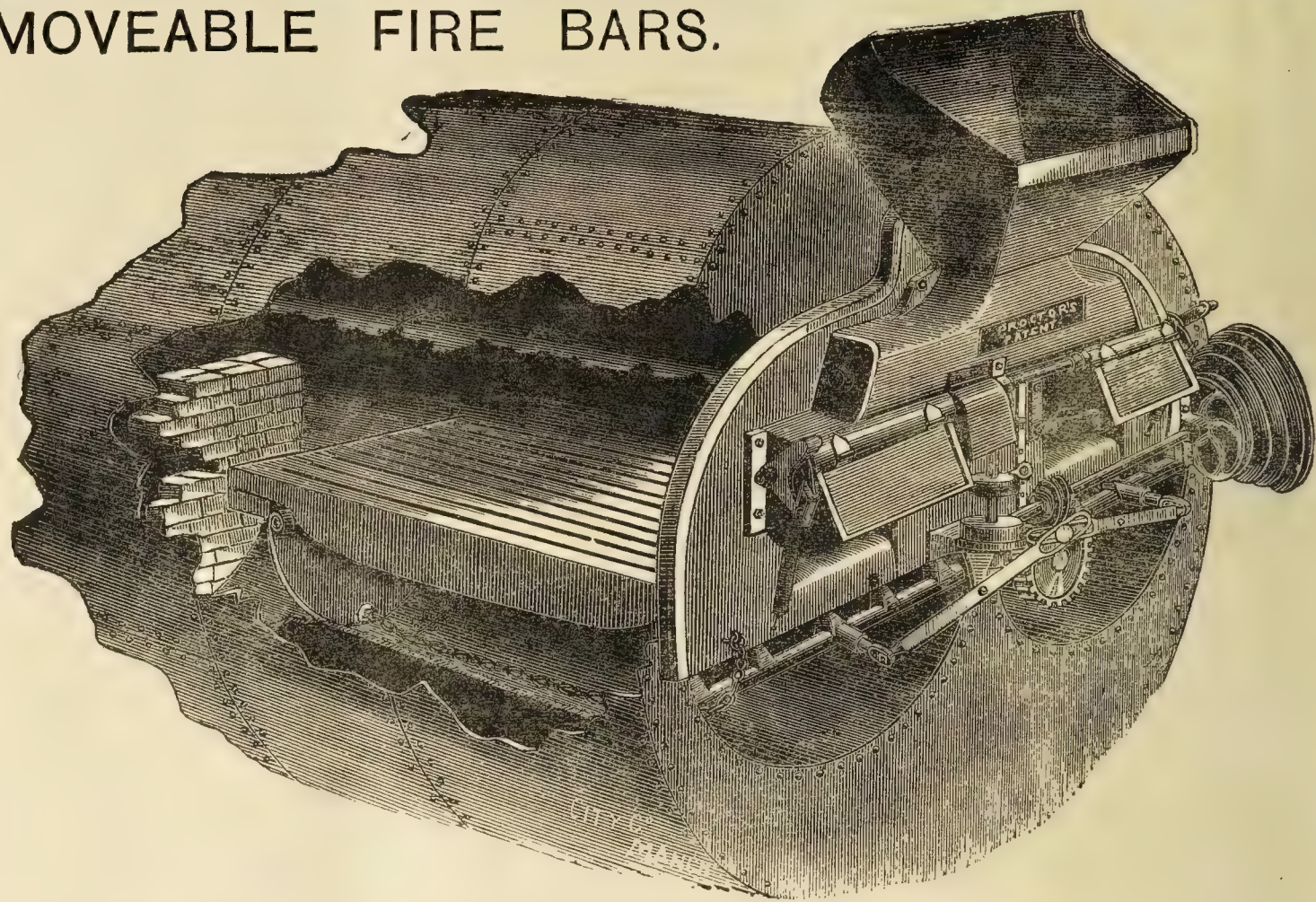
[The Test was made by Mr. Longridge, Chief Engineer of the Engine and Boiler Insurance Company (Limited), Manchester, at the Mill of Mr. Eli Heyworth, Blackburn, on the four days, November 25th to 28th, 1881.]

Before purchasing, all parties interested, are earnestly invited to inspect the Machine, which can be seen at the Works. It is without doubt the simplest, and has the least working parts of any before the public.

Over 800 Boilers have been supplied with these Stokers.

J. PROCTOR, Patentee and Maker,
HAMMERTON STREET IRON WORKS, BURNLEY, LANCASHIRE.

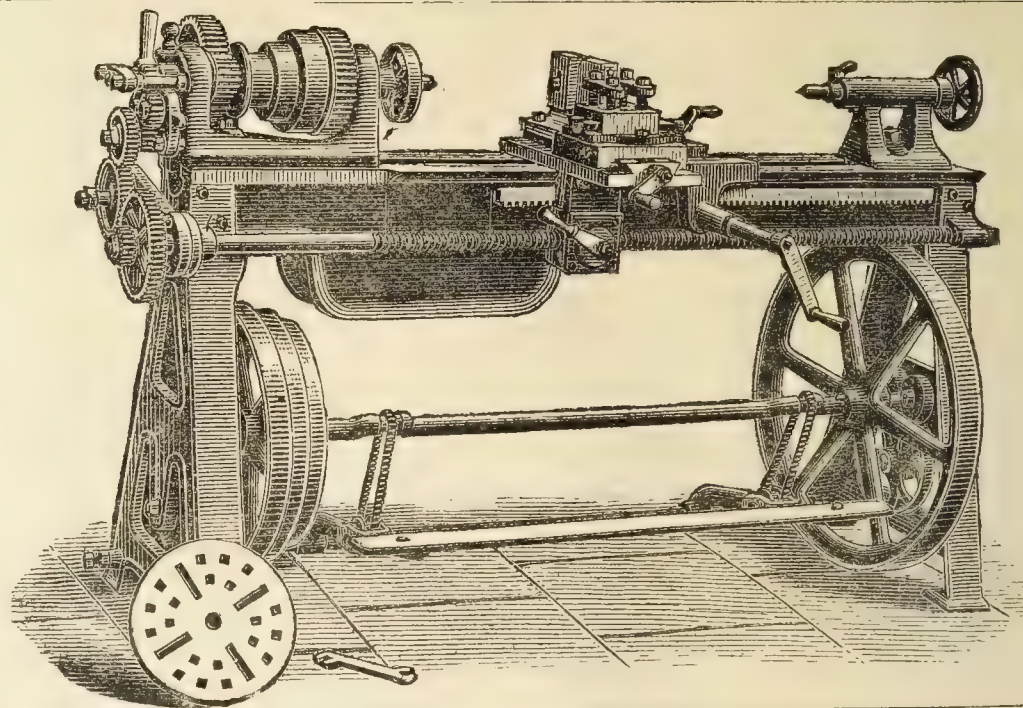
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MAKERS OF ALL KINDS OF

High Class Engineers' Tools,
LATHES, PLANING, DRILLING, SLOTTING,
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Makers of all kinds of **SIDE ROLLER TEMPLES** for **FLAT ANGLE** and **ROUND BAR FIXINGS**, 1, 2, or 3 Rollers, Fine or Coarse Cut Teeth. Bar Under with Angle Bar over the Cloth. **SIDE TEMPLES** for Loose Reed Looms. **SWISS** or **RING TEMPLES** with any number of Brass Rings. **BRASS ROLLERS** with Steel Teeth.

LLOYD HARGREAVES,
GENERAL PATTERN MAKER,
MAKER OF
SPUR, BEVIL, SKEW & ECCENTRIC GEARING.
ALL KINDS OF
MACHINE PATTERNS

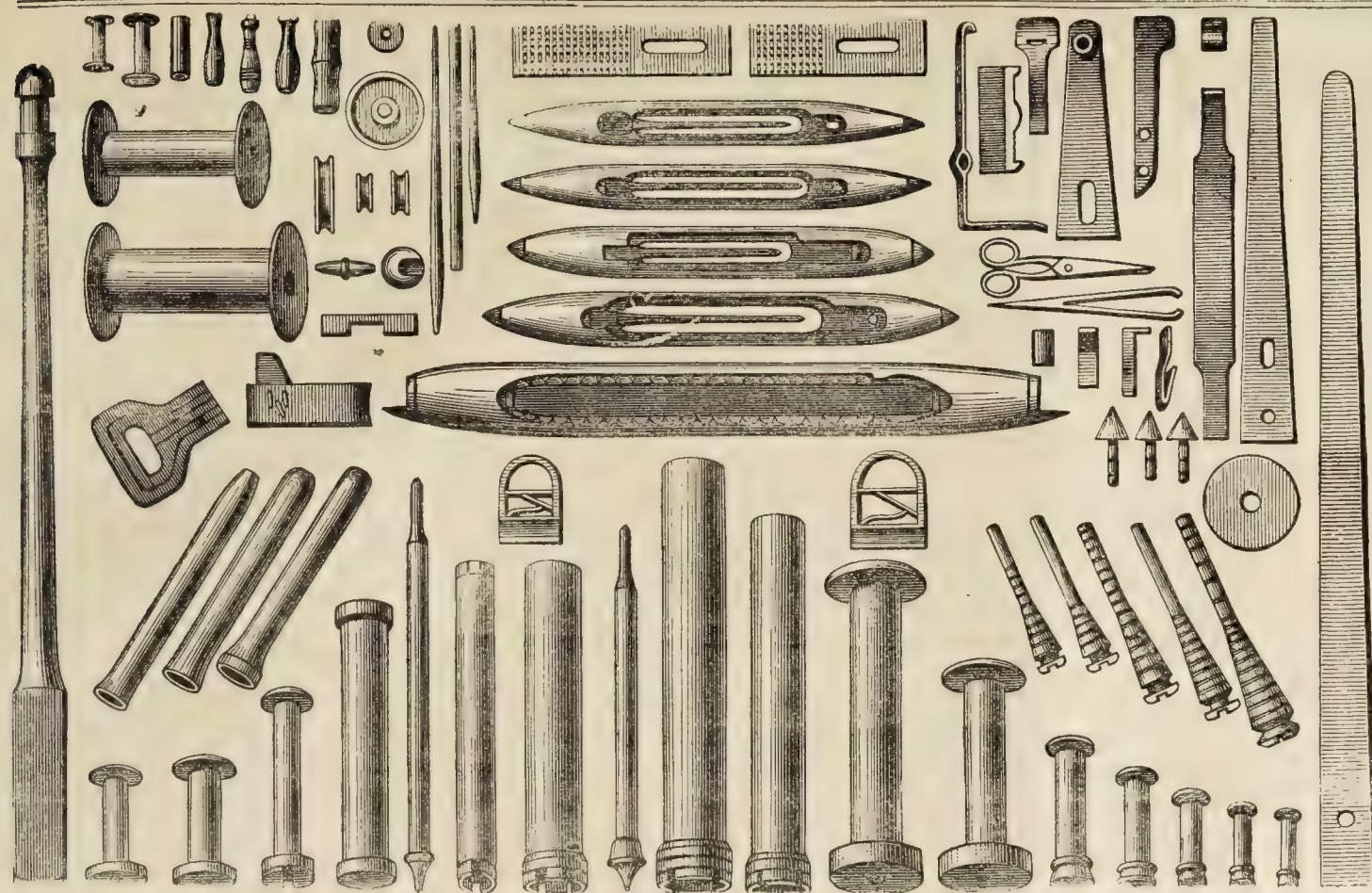
MADE TO DRAWINGS OR SKETCHES.

WORKS:—GAOL LANE,

ESTABLISHED
1868

HALIFAX.

PRICE LIST ON
APPLICATION.



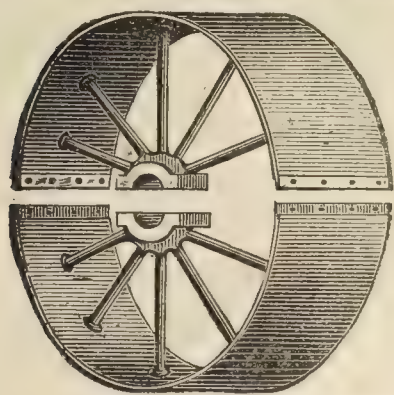
IRVIN & SELLERS, PRESTON AND LIVERPOOL.

MEDALS

Dublin	-	1865.
Paris	-	1867.
Paris	-	1878.

DIPLOMA :

Vienna	-	1873.
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GEORGE CROSSLEY, ALBION FOUNDRY, CLECKHEATON, YORKSHIRE.

Maker of all Descriptions of WIRE MACHINERY, also WROUGHT-IRON PULLEYS, (with Single or Double Arms and Cast Iron Bosses), which for Cheapness, Lightness, and Strength, are Unsurpassed.

PRICE LIST ON APPLICATION.

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REEDS AND HEALDS,

For Weaving Silk, Cotton, Woollen, Worsted, Carpets,
Sail Cloth, Wire Cloth, and other Goods.

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**CENTRAL WORKS, THORNTON ROAD,
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ELKANAH HOYLE & SONS, LIMITED,

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MAKERS OF

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And all sorts of Machines for the

DYEING AND FINISHING OF BRADFORD STUFF GOODS

WATER SIDE WORKS, HALIFAX.

WALTER WIGGLESWORTH,

MAKER OF

Condenser Rubbers,

Single and Double Strapping, Picker and Side Straps for Looms,
Laces, &c. All kinds of Pump Buckets and Frictions Re-Leathered.

PAGE STREET LEATHER WORKS,

HUDDERFIELD.

EDE AND BASTOW,

MAKERS OF ALL DESCRIPTIONS OF

FANCY YARNS,

PROVIDENCE MILLS, SUNBRIDGE ROAD,

BRADFORD Works.

JAMES DAVIS & CO.,

Contractors for every description of Electrical Apparatus,

LIGHTNING CONDUCTORS,

TELEPHONES,

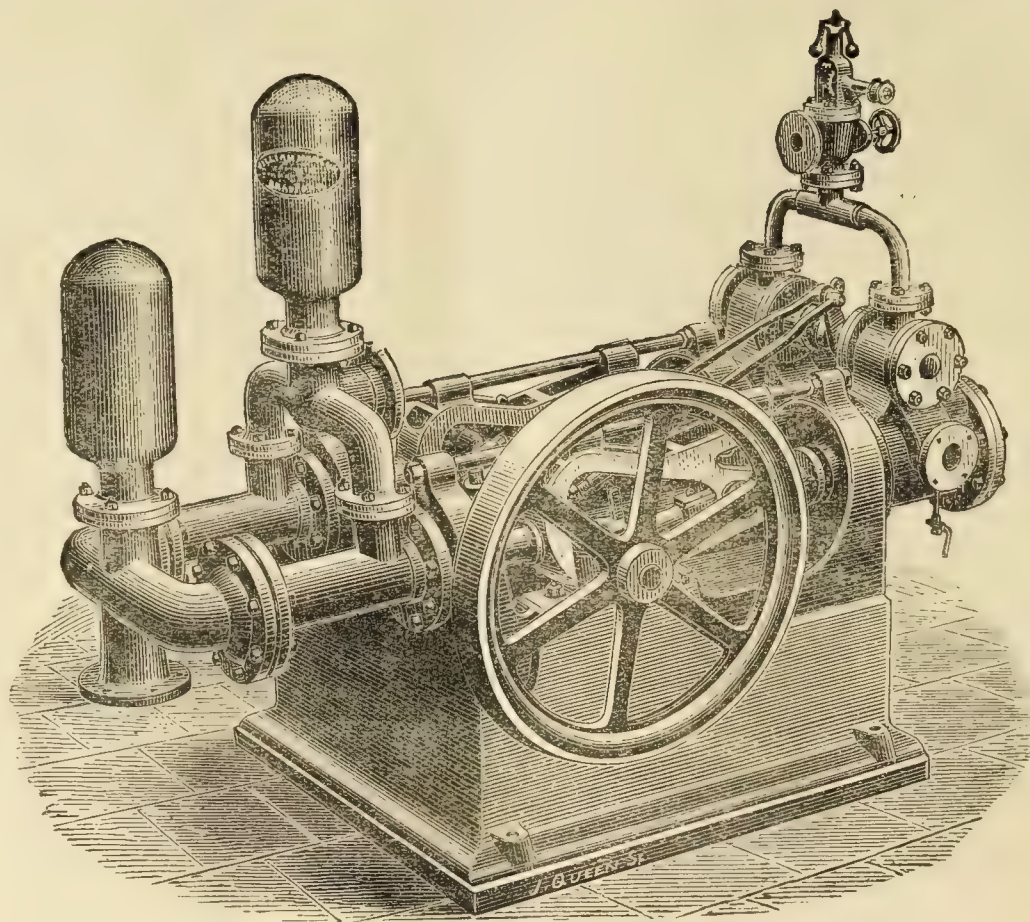
ELECTRIC BELLS & SPEAKING TUBES

51, TYRREL ST., BRADFORD.

HANSON'S IMPROVED HORIZONTAL STEAM PUMP.

The maker of this Pump has had experience with almost all kinds of Steam Pumps for a great number of years, and has designed this with a view to remedy the many evils in those heretofore made by different makers. The Pump (as will be seen from the annexed woodcut), is very compact, and everything is easy to get at. It is very firm, all being fixed to a strong cast-iron bed, which is so arranged that any water leakage from the stuffing boxes is caught and drained away. All the glands and stuffing boxes are bushed with brass. The crank shaft is much stronger than usually made, to prevent breakage, which frequently occurs in ordinary Pumps. All the necks are unusually large, to prevent wear and tear.

Two kinds of these Pumps are made, one as shewn on the woodcut, for lifting water and as a steam fire engine. This Pump will deliver a stream of water as regular and as steady as the town's mains, and when used for fire purposes will give from 90 lbs. to 120 lbs. water pressure, or more if required. The other is used as an ordinary ram Pump for feeding boilers with water.



ALSO MAKERS OF
STEAM REDUCING
VALVES.

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STEAM CRABS.

HYDRO - EXTRACTORS,

New Design.

STEAM SAVERS for

Dyehouses, &c.

WATER HEATERS.

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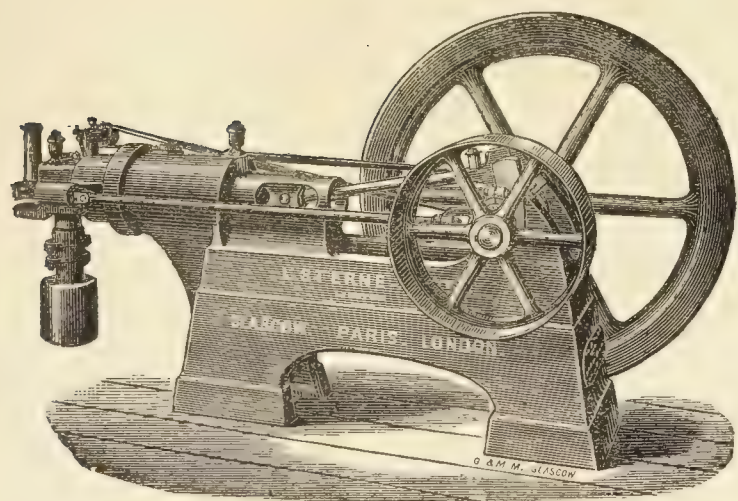
WM. HANSON, Engineer, Quebec Works, Thornton Road, BRADFORD.

LONDON OFFICE, 37, WALBROOK. E.C.

CLERK'S PATENT GAS ENGINE

Highest Award for Motive Power
British Section, International Exhibition of Electricity,
Paris, 1881

Gold Medal Awarded,
Crystal Palace Electrical Exhibition,
London, 1882.



THIS ENGINE has AN IGNITION AT EVERY REVOLUTION, and is UN-EXCELLED for all purposes where a STEADY POWER is required. It is extremely SIMPLE, has NO GEARING WHEELS of any kind, is NOISELESS in Action, and THE POWER IS MUCH GREATER for the size of the Engine than any other Gas Engine.

STRONG'S PATENT FEED-WATER HEATER AND FILTER,

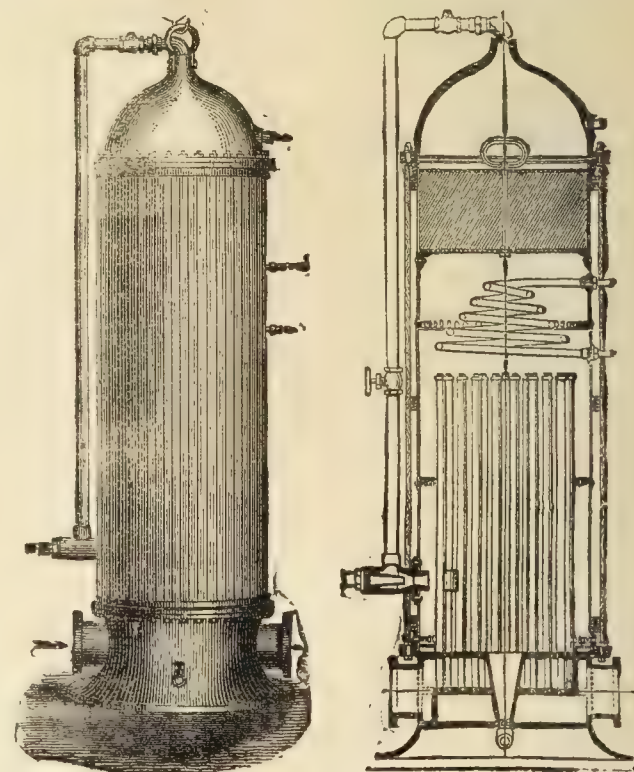
FOR
PURIFYING FEED-WATER FOR STEAM BOILERS.

SOLE MAKERS:
L. STERNE & Co.
LIMITED,
ENGINEERS,
THE CROWN IRON WORKS,
GLASGOW & MANCHESTER.

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ALSO SOLE MAKERS OF THE
PATENT CONSOLIDATED EMERY WHEEL,
EMERY WHEEL MACHINERY,
AND EVERY DESCRIPTION OF
SPIRAL SPRINGS.



This Apparatus heats the water to a HIGH TEMPERATURE and FILTERS IT while HOT, rendering it FREE from all MINERALS and ACIDS which would cause SCALING or COHERENT DEPOSIT in the BOILER and SAVING A LARGE AMOUNT OF FUEL.

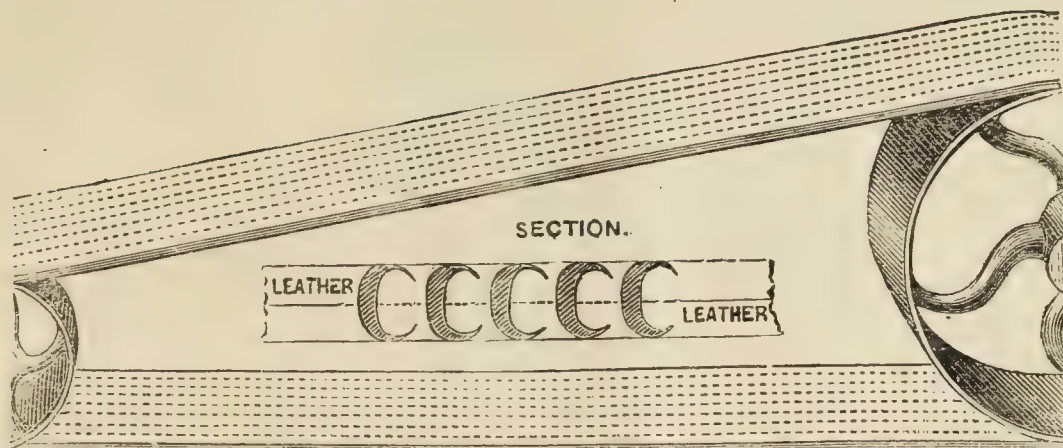
PLEASE SEND FOR ILLUSTRATIONS AND PARTICULARS.

MAIN LEATHER DRIVING BELTS.

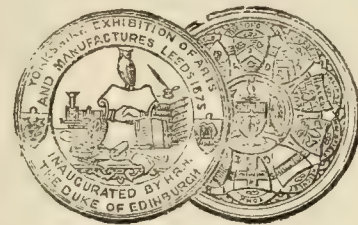
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AND HONOURABLE MENTION.



PARIS, 1878.



PRIZE MEDAL FOR BELTING,
CARD AND
CLOTHING LEATHER, &c., &c.



LEEDS, 1875.

THESE BELTS are made of the very best Oak-tanned English Leather, cut from the choicest parts, specially Prepared, Stretched and Manufactured with the greatest care and attention; united by Hydraulic Power, and Sewn with Copper Wire, by WHITE'S PATENT WIRE SEWING MACHINE, as shown by the section above, any width, and capable of transmitting any amount of power required. Whilst giving prominence to their Wire-Sewn Belts, as being in their experience the best in construction, J. W. & Sons will sew with lace, wax thread, or in any other way that may be desired.

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SPECIALITIES IN EXCELLENCE.

Machine Belting of all kinds.
Hard Drawing Roller Butts.
Soft Drawing Roller Hides.
Hard Spinning Roller Butts.

Soft Spinning Roller Hides.
Combing Leathers of all Sizes, for
Silk, Worsted, Jute, Flax, &c. &c.
Oak-Tanned Picking Bands.

Green Picking Bands.
White Ox Hide Laces.
Brown Leather Laces.
Flat Horny Laces.

Flap Leathers for Cold Blast
Engines.
Pump and Bucket Leather, extra
Strength and Quality.

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TANNERS, CURRIERS, AND LEATHER MERCHANTS,

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PARK ROAD TANNERY AND LEATHER WORKS, BINGLEY, YORKSHIRE.

Sole Agents for the United States of America: Messrs. STODDARD, LOVERING & Co., Manchester & Boston, U.S.

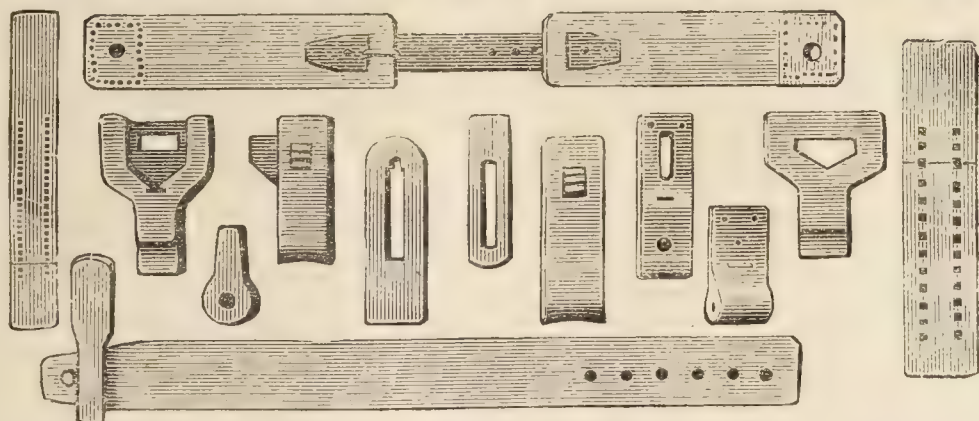
Note.—Five of our Belts are at work at the Electric Exhibition, Royal Aquarium, Westminster, giving unqualified satisfaction.

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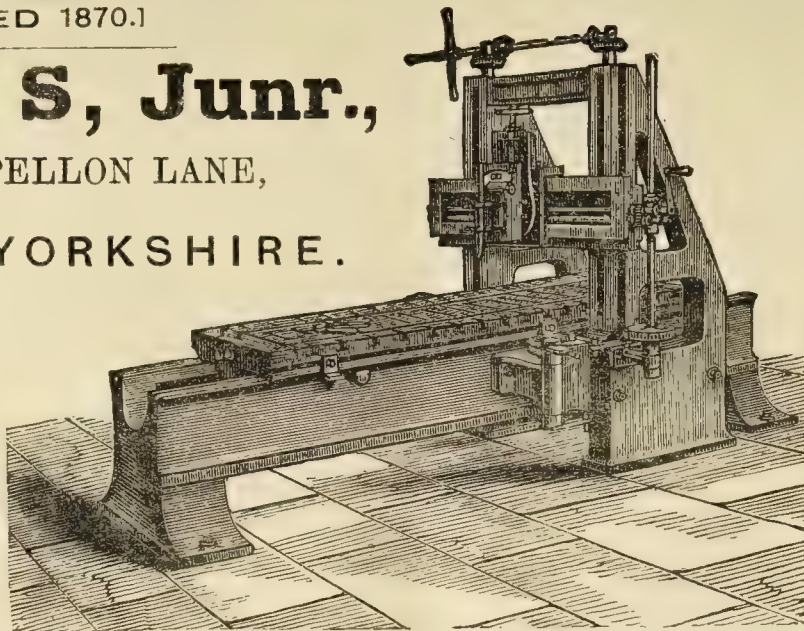
[ESTABLISHED 1870.]

D. BINNS, Junr.,

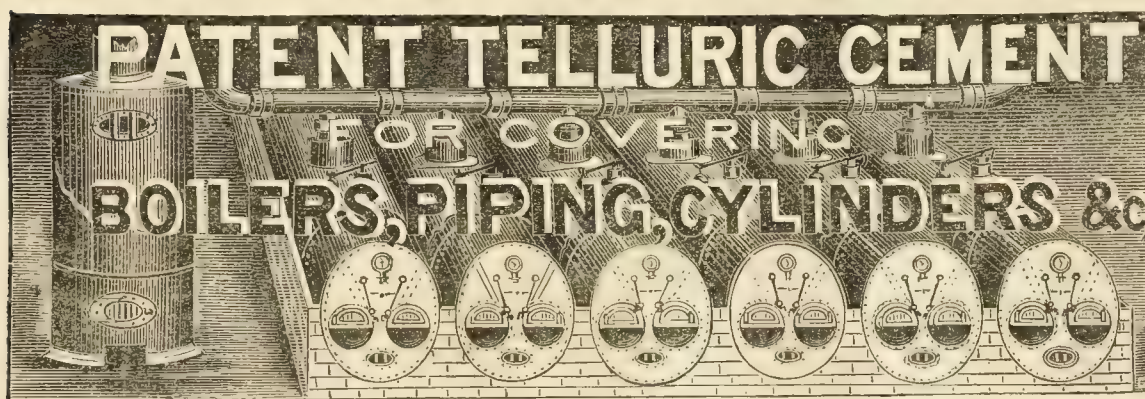
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For Sale, cheap, second-hand, a nearly new 7ft. Pan Mortar Mill, with
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Specially adapted for the Combing and Carding of Wool and Woollens.

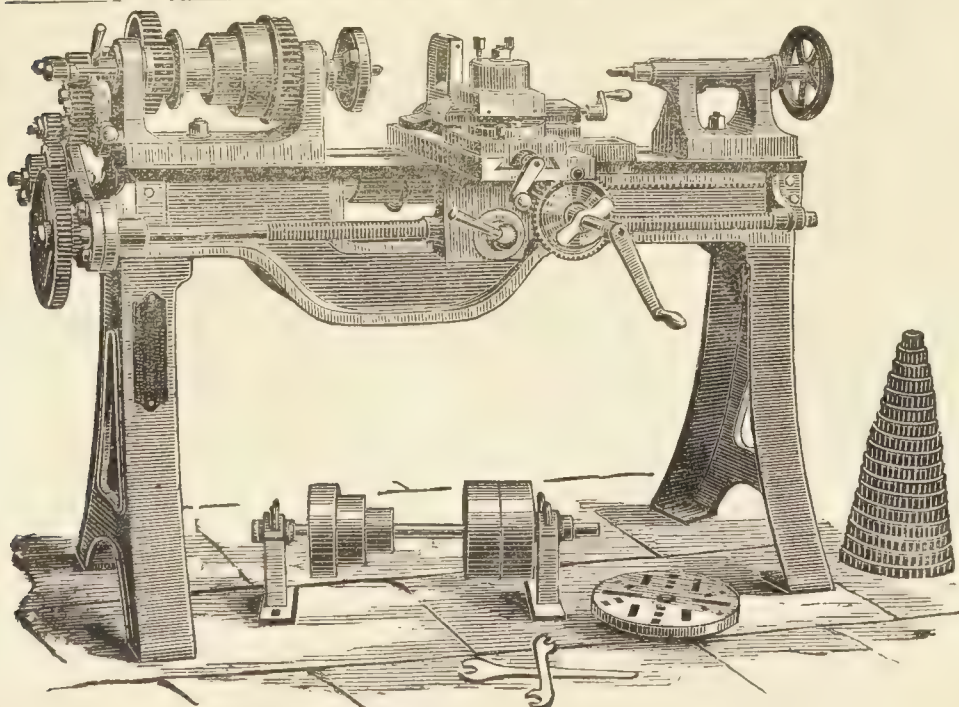


This Oil has superior advantages over all others yet used. It produces better colour in the top, and gives a softer and fuller yarn, hence it makes a fuller cloth. It produces better and brighter colours in dyed and stoved yarns than wools combed with the ordinary oils, and renders them firmer in spinning. It can be used with safety on dyed and stoved wools and melange in double combing, with a saving of 25 to 30 per cent. in price, and further, does not reece in the wool same as Gallipoli oil, and is not at all inflammable.

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SPECIAL MACHINERY AND TOOLS CONSTRUCTED.

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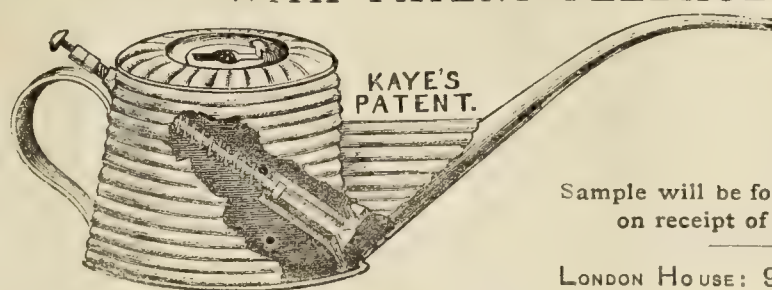
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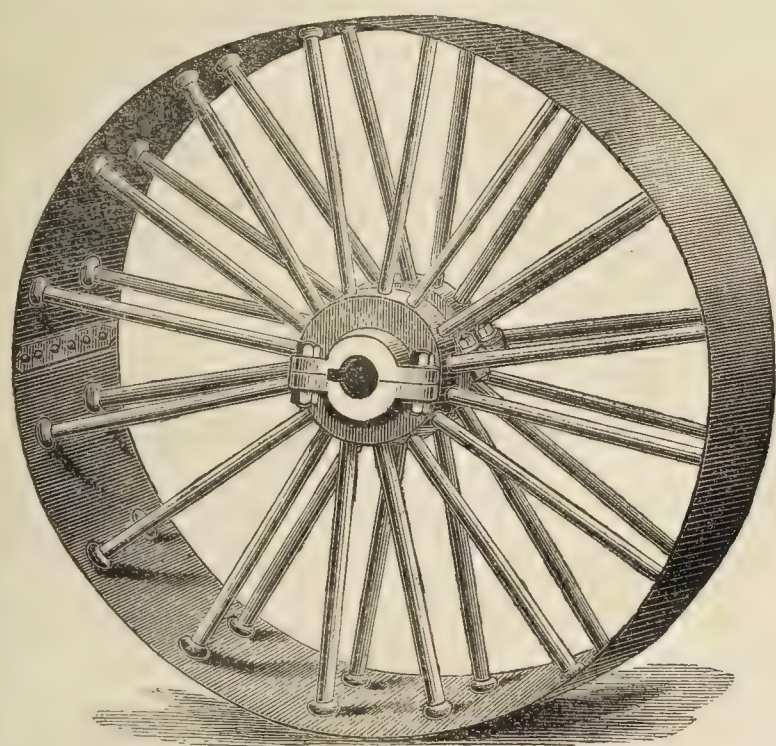
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Sample will be forwarded, Post Free, on receipt of 2/- in Stamps.

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Sole Makers:—

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With Cast Iron Bosses.

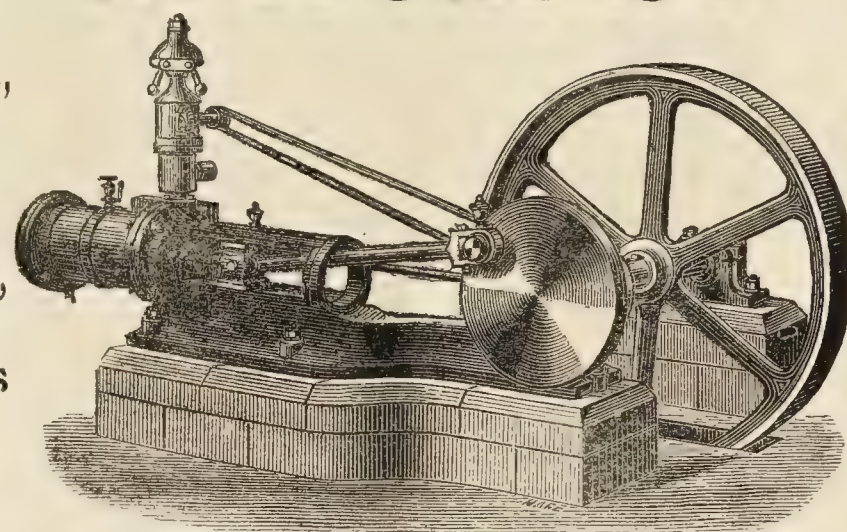
IMPROVED

HORIZONTAL ENGINES,

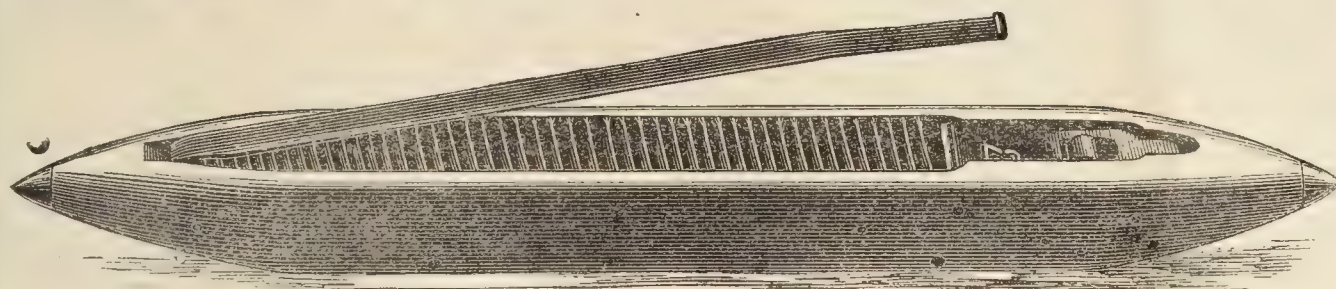
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ENGINES AND BOILERS
COMBINED.

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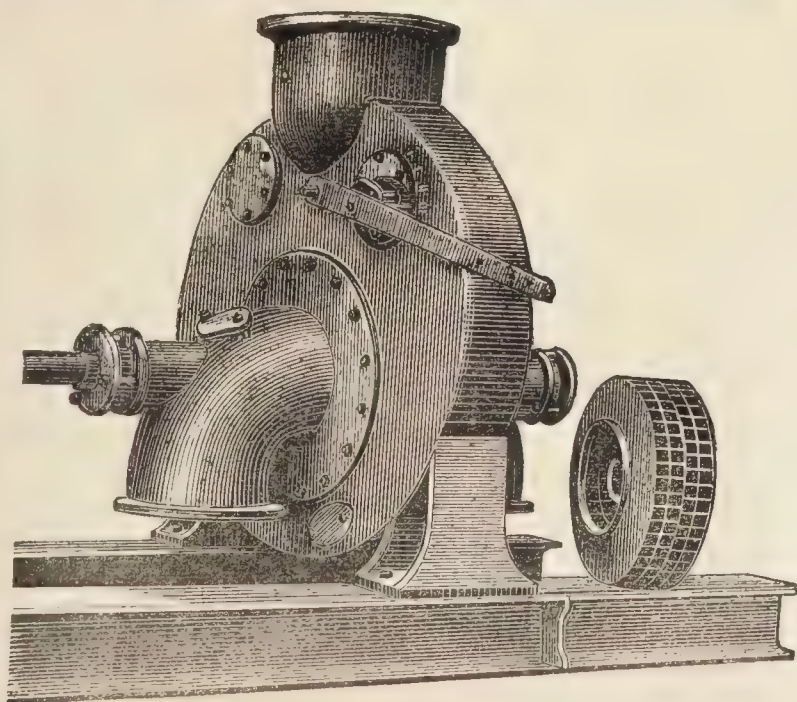
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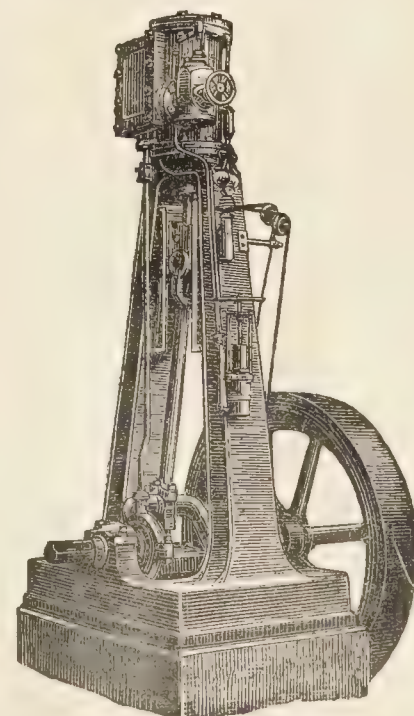
This wheel can be placed in a vertical position any distance from bottom of fall up to 30ft., or at bottom of fall, horizontally.

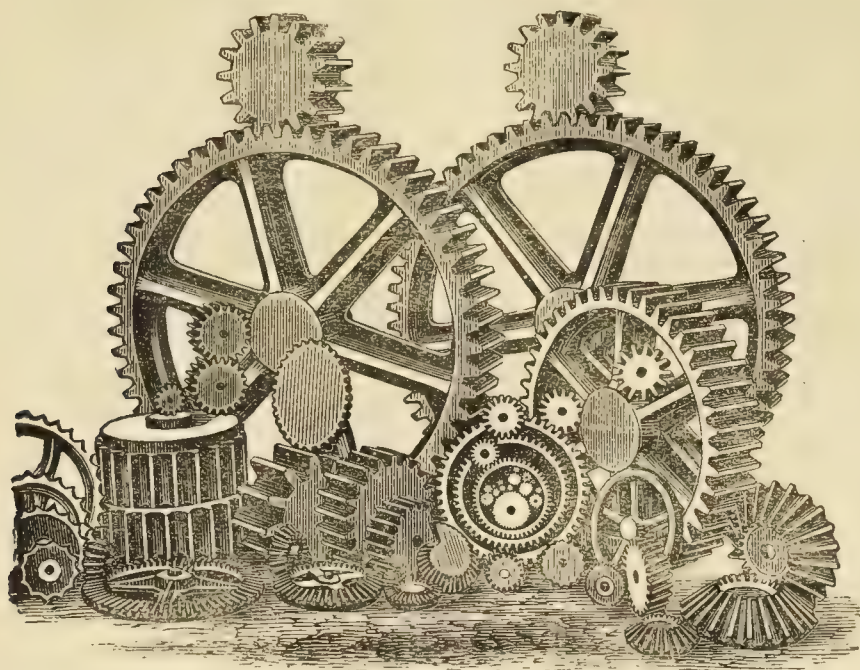
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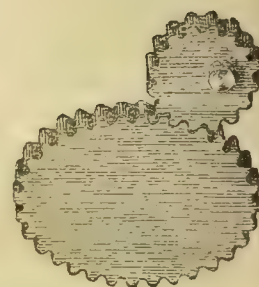
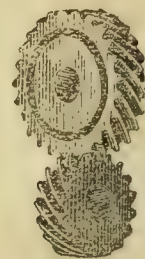
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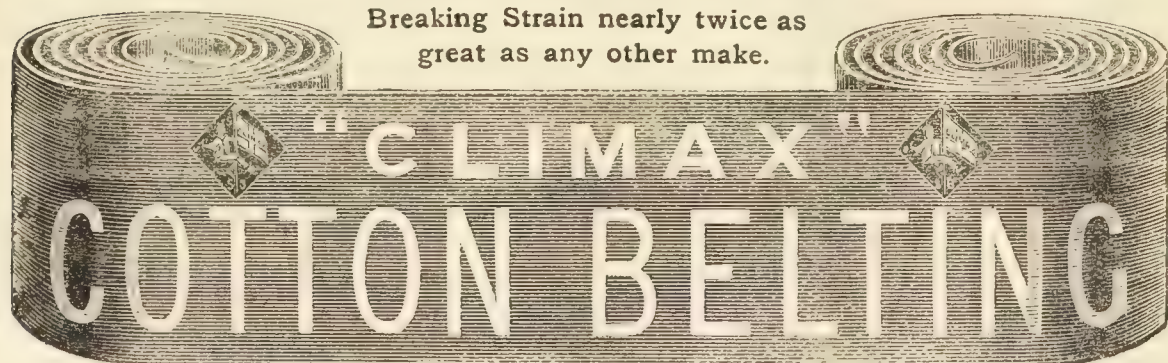
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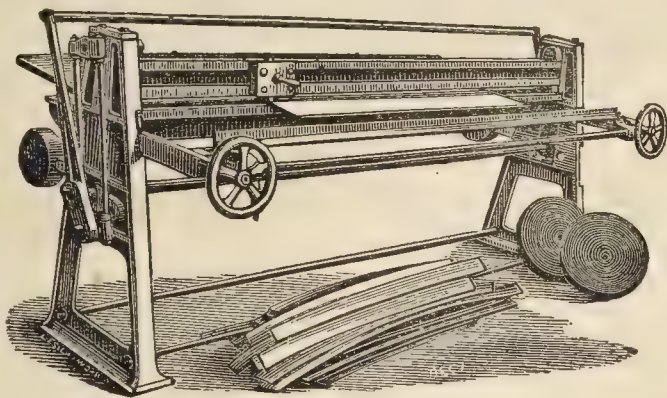
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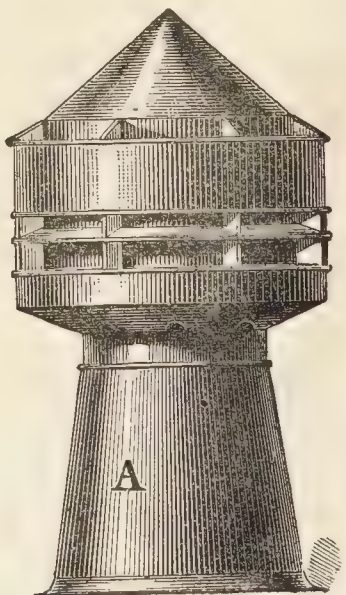
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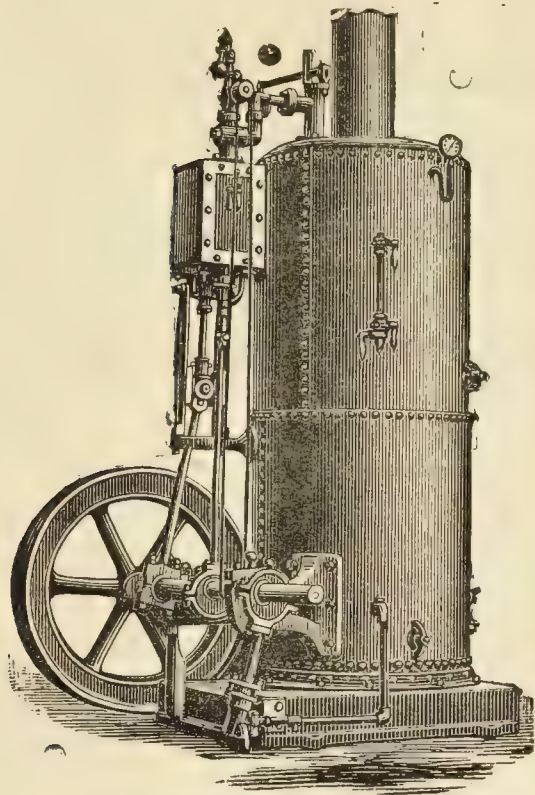
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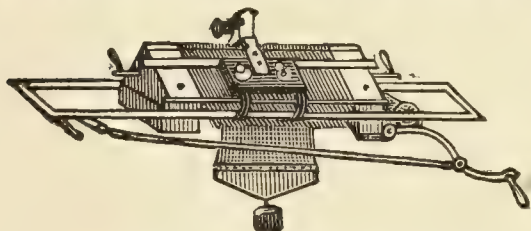
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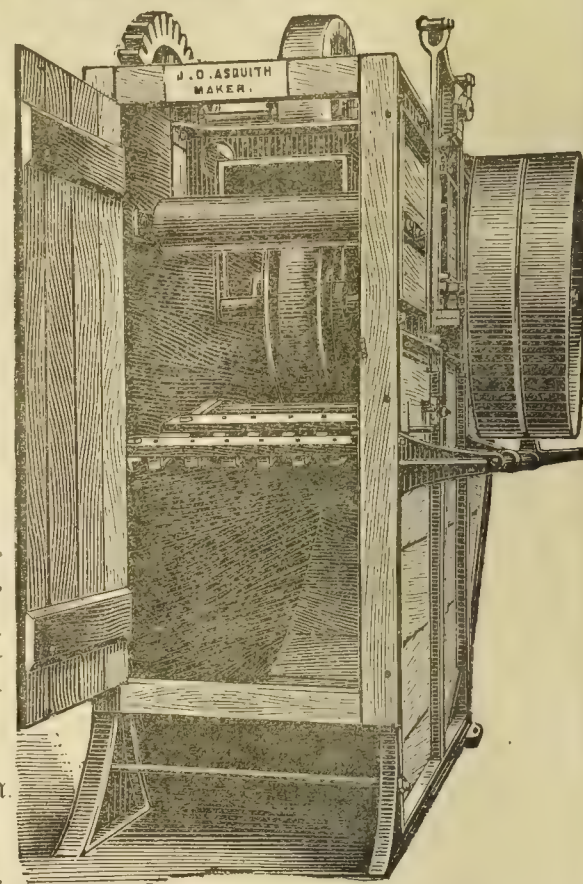
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